NOVEMBER • 1960

FIREMEN

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The Worst Moment —*see page 7*

IONAL FIRE
TECTION
OCIATION

65th
year

SURVEY OF FIREMEN'S TRAINING - - - page 8

THE FLORIDA STATE FIRE COLLEGE - - page 16

AKRON BRASS

Spitz-All

ENDS CLOGGED NOZZLES

If you've ever had a nozzle out of action by clogging from scale, sand, or stones — here's your nozzle. Spitz-All clears itself by pressing a button. No shutting down. No changing stream position. A rugged, lightweight, constant gallonage nozzle that works easily in all positions at any pressure.

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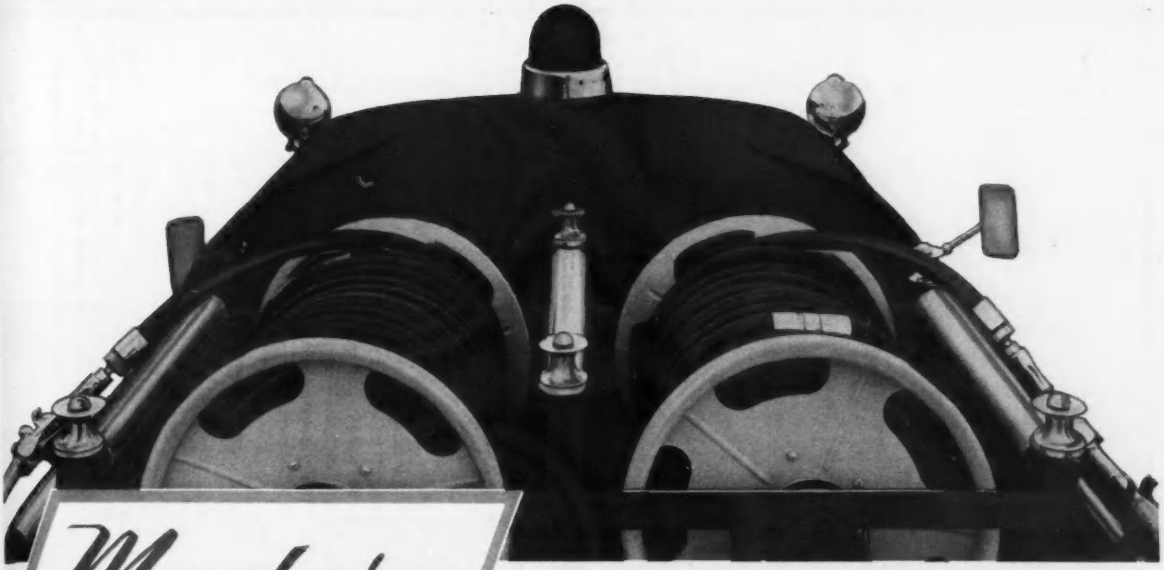
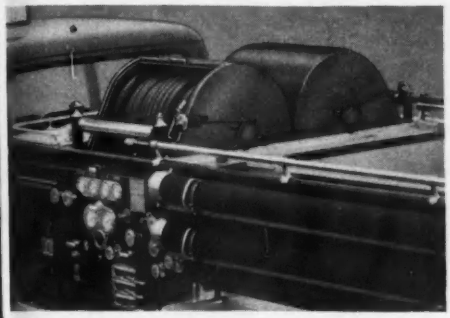
Style	Size	Description	Wt. Lbs.	GPM	Price
910	1"	Solid Base	3	23	$88
908	1"	Pistol Grip	4¾	23	98
905	¾"	Solid Base	3	12	88
904	¾"	Pistol Grip	4¾	12	98
915	1½"	Swivel Base Solid Base	5¾ 5¼	95-60	96

AKRON BRASS MFG. CO., INC., Wooster, Ohio • AKRON MFG. (CANADA) LTD., Aylmer, Ontario



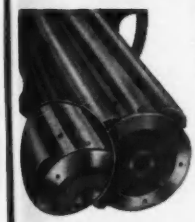
Modern HOSE REEL FEATURES ON American Fire Trucks OFFER MANY ADVANTAGES



From bumper to rear step, American Fire Trucks are packed with features firemen like—features like these superb AFA-built hose reels. See how every detail helps give you faster operation, smoother performance and greater convenience than any other reel built!

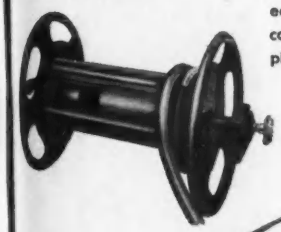
- **Electric Rewind*.** Heavy duty silent V-belt drive is flexible and won't damage equipment or personnel if hose or nozzle become tangled when rewinding.
- One standard heavy-duty starter motor drives *both* reels. Motor can be serviced locally.
- Reel brakes can be adjusted from the ground to prevent back lash.
- Chrome plated brass guide rollers and deep groove spools, and leak proof *ball bearing* stuffing boxes are standard.

Controls on both sides of truck operate reels. Rewinds operate only one at a time to prevent battery overload.



Sliding covers* protect hose reels and fog guns from freezing.

Collapsible, *self-adjusting* spring steel drum louvers flatten when pressure expands hose. Prevents damage to hose and couplings.



Special convex reel wheels with wide rolled edges protect hose. Hose comes *straight* from coupling—*not* sharply bent.

*Optional features at extra cost.

American pioneered the first successful electric rewind hose reel and has continued to increase the fire-fighting advantages of these units.

You can choose hose reels with electric, hand-crank or hand-operated rewinds in keeping with American's policy of giving you a choice of chassis, choice of midship or front-mounted pump, and choice of other features to suit *your* community's needs.

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Darley Champion DeLuxe 750

The beautiful Champion Fire Apparatus, illustrated above, is an unbeatable value in a 750 gallon Class A pumper which conforms to all specifications of the National Board of Fire Underwriters and all State Insurance Bureaus. Delivers 750 gallons per minute at 150 lbs. pressure, 525 GPM at 200 lbs., 375 GPM at 250 lbs. to meet all requirements for Class A Underwriter rating, the highest rating given to any pumper, no matter whether you pay 25% to 50% more than our low price.

Pump — The Darley Champion Pump, manufactured exclusively by W. S. Darley & Co., is the Type SH750, 3-stage centrifugal, which delivers, in addition to Underwriter performance, pressures up to 1,000 lbs. for high pressure fog fire fighting. You get everything you'll ever need in fire fighting efficiency when you get a Champion Pumper. And if it's big volume you want this SH750 will actually deliver 900 gallons per minute pumping water from a river or lake and 1350 GPM pumping from a hydrant which has average to good flowing pressure.

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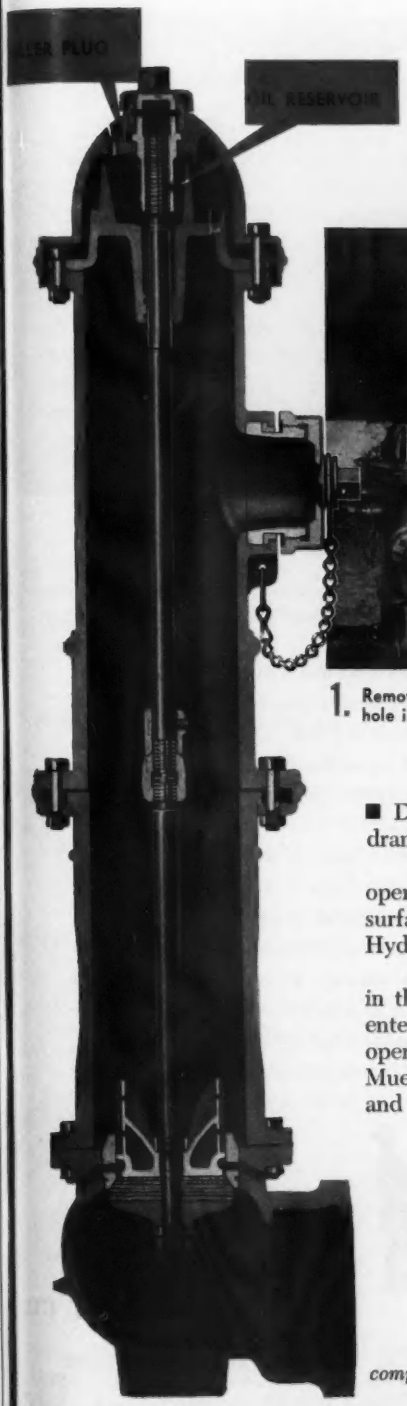
You'll want to know all about our low cost finance plan or combination PURCHASE-RENTAL plan.

an important 30 seconds in the life of your fire hydrants!

PERIODIC INSPECTION OF HYDRANT LUBRICATION



here's how easy it is to check **MUELLER®** *AWWA Improved Hydrants.*

1. Remove filler plug from oil hole in hydrant bonnet.

2. Insert dip stick into oil hole until it touches bottom of oil reservoir. Withdraw dip stick and note oil level.

3. If oil level is low, add oil and recheck level. Repeat until oil is up to "full" mark on dip stick. Replace filler plug.

■ Designed for minimum maintenance, Mueller AWWA Improved Hydrants have all of the bonus features that count.

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Dry-top design seals the stem threads and bearing surfaces from water in the barrel during operation. A bronze weather cap prevents water from entering from the top of the bonnet. It also prevents ice from freezing the operating nut and discourages tampering. Add up these "bonus features" in Mueller AWWA Improved Fire Hydrants and you'll see why so many cities and towns have "Standardized on Mueller".

MUELLER HYDRANT LUBRICANT
New 8 ounce can completely fills one hydrant. Plastic filler spout has metal ring to indicate correct oil level and serves as a handy dip stick.

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PROTECTS THE CITY OF
MEMPHIS, TENN.

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ONLY PITMAN OFFERS:

- A Snorkel equipped with full complement (208 feet) of ground ladders, meeting NBFU standards as listed in Bulletin No. 19
- Your choice of 50, 65 and 85 foot models
- 1000 pound capacity in any boom position
- One-hand control of boom from platform
- Choice of dual controls on ground or on turntable
- Ground-to-platform communications system
- Hydraulic self-locking A-frame outriggers
- No pressure kick-back on platform when throwing water
- 3½-inch water supply to deck pipe on platform
- Positive dual mechanical platform leveling system
- Low overhead height when boom is in travel position
- Means to lower and rotate booms mechanically
- Installation on a truck of your choice
- Wide selection of body styles, midship pumps, etc.
- Continuous 360° rotation
- "Fail-safe" hydraulic system

Memphis' Pitman Snorkel photographed in front of the Irving Zuelke Building, Appleton, Wisconsin, through co-operation of Appleton Fire Chief Alfred Arnold.

Snorkel
FIRE EQUIPMENT CO.
DEPT. F-11
GRANDVIEW, MISSOURI

NFPA FIREMEN

Volume 27 Number 11

A monthly magazine published for the fire service members of the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

FIREMEN magazine is available only through membership in the NFPA. Complete details on membership can be obtained by writing to the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

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Perhaps the most dreaded experience for fire fighters comes when they respond to a situation in which the lives of children are threatened. In the history of the fire service, such moments have brought the most heroic, the most desperate and the most self-sacrificing actions of men as they attempt rescue.

If the youngsters are brought to safety, even though burned or injured, the rescuers have some compensation for their moments of dangerous risk and exhausting effort. When rescue of a youngster cannot be made, however, fire fighters suffer a severe emotional shock, a shock equalled perhaps only by the loss of one of their own department members in a fire. It is during these moments of attempted rescue that a fire fighter exercises all his powers of intelligence and physical action, all his accumulated training and experience, all of his human sensibilities. When his maximum effort fails, the defeat is embedded in his memory for life.

This month's cover depicts one of those moments on the fire ground. The incident was a "small" fire, bringing one-alarm response and subsequently causing minor property damage. It occurred in the living room of a third floor apartment in a 3-story wood frame dwelling. Apparently a cigarette or embers ignited a divan and the fire burned for about two hours before the children were heard screaming by a neighbor. Three engine and two ladder companies responded to the alarm. Entry was made quickly and the fire was mopped up with hand lines as rescue was being attempted. In that short time, however, a mother and three children died from the effects of heat and smoke. The mother had led one child to safety but died when she went back for the other three. The resuscitation attempts, shown in the cover picture, were unsuccessful. (*Cover photo by Dan Sheehan.*)

The cold weather season is beginning and with it comes an increase in the potential of fire deaths in dwellings. Each year the heating season brings numerous fire tragedies, particularly affecting children and older persons in dwellings. Many fire departments have already begun special campaigns to warn the public of the fundamental dangers of fire in the winter season. In Massachusetts, for example, a number of fire departments have followed the lead of the Boston Fire Department by stressing the dangers of oil-burning space heaters. (See FIREMEN for April, 1960.)

This year the NFPA has put out a new folder to guide the homeowner in the fundamentals of fire safety. Titled "Cold Weather Home Fire Dangers" ($17.50 per 1,000), this little booklet promises to be a popular item for the special cold weather campaigns of fire departments. Also available this month are the new Sparky Christmas poster (8½ x 11 inches, $5 per 100; $35 per 1,000) and a new coloring card for youngsters (4 x 6½ inches, 60¢ per 100; $5 per 1,000). Each of these may be ordered from the NFPA Publications Department.

A final reminder — the NFPA is holding an Open Conference on Safety to Life and Property from Fire at the Hotel Deshler Hilton, Columbus, Ohio, November 14–16. A program has been issued with the November issue of NFPA *Fire News*. Personnel of fire departments in surrounding states are cordially invited to attend the meeting. Firemen in uniform will be admitted to the three-day session without being obliged to pay the registration fee. We call your special attention to the fire protection forums which will be held at 3:30 P.M. on Monday and Tuesday afternoons, November 14 and 15.

WARREN Y. KIMBALL, Managing Editor; PAUL R. LYONS, Editor; HENRY S. GERE, Advertising Manager; ROWENA D. DORES, Editorial Assistant; SHIRLEY TOBEY, Fire Service Department; VIRGINIA STILES, Advertising Department.

SURVEY OF
STATE AND PROVINCIAL FIREMEN'S TRAINING
— 1960 —

THIS year's survey of state and provincial firemen's training discloses several new trends which should be of interest to the fire service. As in previous years, this survey includes only the training programs conducted with the support of various state departments of vocational education (or the equivalent) or through offices of the state or provincial fire marshals. It does not include the thousands of other fire fighters who received training in individual fire departments through county organizations or through schools and annual meetings conducted by fire chiefs and firemen's associations.

Most evident in the training programs is the growth of courses on radioactive materials, radiation hazards and radiological monitoring. A number of the states and provinces now include this type of instruction as a regular feature of fire service training. Included in this group are: Alabama, British Columbia, Colorado, Idaho, Iowa, Maryland, Michigan, Minnesota, Nebraska, Oregon, Pennsylvania, Texas, West Virginia, and Wisconsin.

Another significant trend is the increase in training for chief officers and company officers. Typical of such training was the "Command School" held in the state of Washington last spring and the Annual Fire Officers' Conference which has been conducted so successfully in the state of Connecticut. New training programs of other states and provinces are also reflecting this trend.

In Quebec, fire fighters in training applied water fog to this building fire. After a pre-burn of seven minutes, attack was made with two 1½-inch lines with 100 pounds nozzle pressure and 70 (Imperial) gpm discharge. Fire was out in three minutes.

Another significant trend in the training programs was the large number of structural fires conducted for testing or demonstration purposes. Because such fires give firemen the practical opportunity of applying their techniques and seeing the results they have become a popular feature of many fire schools.

Not included in the reports of the states and provinces on these pages are the comments concerning the possible future expansion of training facilities. However, the following information extracted from the reports sheds light on an encouraging trend:

Arizona plans a new state fire school in the vicinity of Phoenix. Georgia has just opened a new training center to be operated by the Atlanta Fire Department. In Mississippi, funds have been approved by the Legislature for the development of a firemen's training center. In the state of Washington, it is planned to present a request to the Legislature for a fire school.

In a number of other states some consideration is being given to the expansion of existing training facilities or to the development of an actual firemen's training center. For example, Maryland, Nebraska and Tennessee already have planned an expansion program for the state firemen's training centers. In Delaware, Idaho, Minnesota, Missouri, North Carolina, Quebec, Oregon and Wisconsin, planning for new firemen's training facilities is in process.

Alabama: W. L. Rickard, Assistant State Supervisor, Trade and Industrial Education, reports that 2,177 firemen received training last year, with 126 attending the Alabama State Fire School. In addition to basic and advanced training for firemen and fire officers, the annual fire school also featured a new course in radiation hazards. Another new feature of the training program was the First Fire Inspection and Arson Investigation Course just completed in the first week of this month.

Arizona: William R. Woodfin, Supervisor of Industrial Education, reports that the Seventh Annual Arizona State Fire Training School had a total attendance of 138. Special attention was given to methods of testing hydrant flows, radio communications, inspection procedures and methods of handling fires in explosives, rubber, LP-gas, flammable liquids and crashed aircraft. A new training center is being planned for the city of Phoenix.

British Columbia: In British Columbia a great deal of instruction for fire departments and industry is provided by representatives of the fire marshal's office. For example, Fire Marshal Basil Nixon reports that instructors traveled 18,673 miles last year to give training to 238 paid firemen, 1,248 volunteers and 38 auxiliary personnel. Orientation courses for fire officers have been continued and radiation control and mouth-to-mouth resuscitation training were given particular emphasis during the year. Instructors were also provided for the Greater Vancouver Fire Protection Association and Provincial Government Institutions.

California: Thomas S. Ward, Supervisor of Fire Training, reports that 11,194 firemen received instruction through zone and departmental schools last year. In addition, the Seventh Annual Fire Training Officers' Workshop held in Fresno had an attendance of 188 fire department training officers. In cooperation with the Extension Division of the University of California and the California Conference of Arson Investigators, the Seventh Annual Arson and Fire Investigation Seminar was held on the University campus in Berkeley. It was

attended by 231 arson investigators, fire marshals, police inspectors, fire department officers and other personnel from twelve states.

The California training program is handled by a staff including the supervisor of fire training and eight traveling instructors. In addition to the regular training program, the staff also conducted demonstrations for the California Rural Fire Association at Bakersfield. Assistance was given by the California Division of Forestry and the fire departments of Kern County.

Colorado: E. W. Crawford, Supervisor, Firemanship Training, reports completion of a very active training program for the year ending June 30. A total of 6,015 firemen received training at 77 "centers" and 113 communities. Training schools at Denver, Pueblo and Colorado Springs attracted 1,554, and the Annual State-wide Fire School had an attendance of 927. Special instruction included classes for fire officers, sessions on salvage, overhaul and school fires, and new training on rescue breathing, radiation hazards, and radiological monitoring. Tank truck fire demonstrations were conducted near Denver and aircraft crash fire fighting training took place at Lowry Field and Peterson Field. In addition, training was given to fire brigades of state institutions. Attention was given to the use of smoke ejectors in fire fighting, and the Denver Fire Department put out a special pamphlet on this subject. New training planned includes 30-hour leadership courses and sectional fire officer schools.

Connecticut: Roy W. Adams, Director, Vocational Training Field Services, reports that 1,474 men took part in the firemen's training program with 249 attending the Annual State Fire School at the New Haven Training Center. A teacher training course was held for 26 fire officers, the Annual Fire Officers' Conference was attended by 110, and the fire marshals' conference had 120 attending. New training covered the emergency removal of patients and first-aid fire fighting for medical and maintenance personnel of six state institutions and five general hospitals. One hundred and thirty-five received this training, and other training was given to 23 members of industrial fire brigades. Planned for the future is a special course for techniques to be applied in removing persons from elevator cabs or shafts. This will be sponsored by the Vocational Training Field Service in cooperation with the Factory Division of the Connecticut State Department of Labor.

A new course was conducted in the use and handling of explosives for representatives from the State Fire Marshal's Office, fire departments, state highway personnel, private contractors and others.

Delaware: Frank M. Forstburg, Supervisor in charge of Foreman Training, reports that 1,207 volunteer firemen received training last year, with 290 attending the Twelfth Annual Short Course for firemen. In addition to the basic fire-fighting training, courses were also conducted for fire officers and special training on arson and human relations was included.

Florida: Superintendent William H. Barnett of the Florida State Fire College reports that 2,307 persons were enrolled in the training program last year. Annual resident 30-hour courses ran for eight weeks with 213 persons enrolled. Five 30-hour classes were held in the field for 71 persons. Traveling instructors held 74 classes of 15 hours each for a total of 1,480 persons. The Annual Arson Seminar attracted an attendance of 105; an LP-Gas class held in Miami brought 66 firemen; the Florida Fire Service Training Improvement Conference had 50 men attending and an Aircraft Crash Fire Fighting School had an attendance of 225.

Georgia: Thomas H. Quigley, Director of Industrial Education, reports that 2,743 firemen received training in the program last year. Training in this state is guided by the Georgia Fire Institute, which has a special advisory committee nominated by the Georgia State Firemen's Association and appointed by the Georgia Institute of Technology. This combines the training resources of the Institute of Technology, the State Department of Education, local school systems and local fire departments.

The Annual State Fire School, normally held in the spring, was postponed until September (after the fiscal year), because it was held at the new State Fire School managed by the Atlanta Fire Department.

The first Annual State Arson School was held in June with 166 enrolled. Also new this year was the Savannah Zone School conducted with the help of the Savannah Fire Department. Training included instruction in ammonium nitrate, LP-gas and structural fire fighting. Training in crash fire fighting and rescue was conducted at the Albany Zone School through the cooperation of the Albany and the Turner Air Force Base Fire Departments. Another two-day school operated by the Naval Air Station near Brunswick dealt with aircraft fire fighting.

Idaho: Chief Steve Taylor of the Boise Fire Department reports that 320 firemen and 24 safety directors received training last year, with 207 attending the State Fire School. Special attention was given to the training of industrial and institutional fire brigades with emphasis on hospital evacuation.

One of the structural fires of the training program in Kansas. Fire retardant paint was used on one side of this building and this side was the last to collapse.

Illinois: Chief Joseph I. Fetters, in charge of Firemanship Training at the University of Illinois, reports that 8,621 firemen received training last year, with 757 attending the Annual Fire College. Five 3-hour classes in the fundamentals of firemanship were conducted in 107 centers. In addition, there was specialized training courses in fire extinguishment, inspection, instructor procedures, pump operation, and other training. A major project for the firemanship training staff was instruction in fire safety for nursing homes and hospitals. Fire departments in the communities which featured nursing homes cooperated in the program, and the members attended all the classes. Two classes of two-hours or longer duration were conducted in 77 nursing homes.

Indiana: Professor Shelby Gallien, Director, Public Safety Institute, Purdue University, West Lafayette, Indiana, reports that 1,343 firemen received training last year in the state program. A total of 164 attended the Annual Indiana State Fire School. Purdue University features a number of special training programs including short courses in "field instruction." These are conducted and supervised by fire training instructors Norbert Lehman and Charles L. Roblee. Last year a new course in rescue and a new officers' training course were added to the existing courses for fire inspectors, fire instructors, fire administrators, the Basic Fire School, industrial fire brigades and arson investigators.

Iowa: Keith Royer, Supervisor, Firemanship Training, Iowa State University, reports that 3,609 firemen took part in the program last year, with 550 attending the Annual State Fire School. Thirty-hour short courses were also conducted for instructors, inspectors and members of industrial fire brigades. One thousand, eight hundred and sixty officers in paid and volunteer fire departments also received special training. Radiation hazard training was included in many of the sessions, and 75 men received training in radiological monitoring.

Forty-five fire "experiments" were tried during the year. In addition, Iowa State University was host to one of the National Fire Defense Seminars conducted in the summer of 1960. The Iowa training program included a number of 12-hour courses, as well as an 18-hour basic course conducted at various fire departments by a staff of 18 part-time instructors. A regional fire school was held at Dubuque, an Industrial School was held at Cedar Rapids, and regional type instructor training and officer training was also included. The firemanship training staff at Iowa State University produced a very useful 20-minute color film, "Fire Fighting in Country Elevators," which was described in the August, 1960, issue of FIREMEN magazine.

Kansas: Edgar M. Munday, Chief Firemanship Instructor at the University of Kansas, reported that 1,515 firemen took part in the training program last year, with 305 attending the Kansas State Fire School. A special course in instructor training for fire department company officers had a total enrollment of 55. The Annual Fire School featured a number of demonstrations with one featuring the use of fire retardant paints. First-aid fire fighting training was given to members of the Kansas Highway Patrol. Chief Instructor Munday also reports that three sets of color transparencies were developed for training pump operators.

Kentucky: John L. Thompson, Chairman of the Kentucky Fire School Committee, reports that 3,190 firemen received training from the state in-service program. An additional 722 took part in the Annual Kentucky State Fire School. This included members of industrial fire brigades. Each head instructor is responsible for develop-

(Top photo) Group that attended the 7th Annual Fire and Arson Investigation Seminar at University of California. (Bottom photo) Class during the Fire Officers' Workshop in Fresno. *(Photos by California State Department of Education, Bureau of Audio-Visual Education, Sacramento.)*

ing teaching aids which include actual working models and miniature models of cities and towns.

Louisiana: Superintendent Frank E. Domma reports that 212 firemen took part in the training program last year. The Annual Louisiana State Fire School had an attendance of 104, and 108 fire officers and firemen took part in other training schools. Plans call for the addition of an itinerant instructor to travel to fire departments throughout the state.

Maine: There is continual improvement in the training program in the state of Maine. Nelson Ingalls, Supervisor, Fire Service Training, reports that 1,496 officers and men took part in the program last year, with much of the training devoted to teaching instructors. A special course was given in the operation of fire department pumpers, and currently a new "pilot program" is under way in which the principles of mathematics and mechanics are taught for fire fighters. Subsequent to the end of the fiscal year a new week-long course in aerial ladder operation was conducted by Captain Cornelius F. Finnegan, of the Training Division of the Boston, Massachusetts, Fire Department.

Maryland: One of the most extensive state firemanship training programs is conducted in this state under the direction of Robert C. Byrus, Director, Fire Service Extension, University of Maryland, College Park. Members of the volunteer fire department must receive a certain minimum of training before being granted certificates. For example, last year 1,865 men received a minimum of 60 hours of training, with 1,463 others taking part in special training schools.

A total of 334 were at the Annual State Fire School. Special courses in the program included instruction in rescue operations, aerial ladders, fire protection for industry, fire inspection, sprinkler operation and maintenance and officer training. New classes were conducted for radiation meter operators and advanced port security fire protection. Instructors of the fire service extension are using a new method of making projected transparencies, and are also using a

This 1,600 gallon tank truck on loan from the Nevada State Division of Forestry to the Sparks and Washoe County Fire Departments is used effectively in mutual aid operations. *(Photo by H. B. Matherly)*

TOTAL FIREMEN RECEIVING TRAINING
(State and Provincial Programs Only)
Year Ending June 30, 1960

State		State	
Alabama	2,177	New York	13,304
Arizona	146	North Carolina	2,580
California	11,194	Ohio	6,542
Colorado	6,015	Oklahoma	2,408
Connecticut	1,474	Oregon	2,036
Delaware	1,207	Pennsylvania	10,053
Florida	2,307	South Dakota	422
Georgia	2,743	Tennessee	581
Idaho	320	Texas	3,768
Illinois	8,621	Virginia	2,045
Indiana	1,343	Washington	1,239
Iowa	3,609	West Virginia	680
Kansas	1,515	Wisconsin	4,671
Kentucky	3,190		
Louisiana	212	Total U. S.	110,550
Maine	1,496		
Maryland	1,865	Brit. Columbia	1,486
Michigan	2,053	Nova Scotia	480
Minnesota	4,480	Saskatchewan	1,008
Missouri	1,035	Quebec	2,544
Montana	927		
Nebraska	1,675	Total Canada	5,518
Nevada	617	Gr. Total	116,068

flannel board with metal backing and magnetic devices for certain forms of instruction. Currently, plans call for the expenditure of some $250,000 for improving the firemanship training facilities.

Michigan: Francis Hartman, Supervisor of the Firemanship Training Program at the University of Michigan Extension Service reports that 2,053 men enrolled in training classes last year. The 4-day program of the 32nd Annual Michigan Fire College brought 234 paid, volunteer, industrial and civil defense fire fighters. The Twelfth Annual Fire Department Instructors' Conference, a 30-hour course, was attended by 31. The Third Annual Arson Control Seminar had an attendance of 157 and the Second Annual Fire Chiefs' Training Conference brought 87 chief officers. The Third Annual Industrial Fire Control Seminar had an attendance of 140. In addition, there were basic 40-hour firemanship training courses, regional fire schools, in-service training and industrial fire brigade training.

Minnesota: E. L. Weber, Assistant Commissioner, Fire Marshal Division, reports that 4,480 firemen attended the Minnesota State Fire School, 14 regional firemen's association schools and special training classes in fire departments of first- and second-class cities. Radiation and radiological courses, fire size-up and attack, and exposure protection were included in the training program. In Minnesota, traveling instructors use the equipment owned by fire departments for the special training courses. Currently, there is strong demand for basic and advanced training for volunteer fire fighters.

Mississippi: J. W. Browne, State Supervisor, Trade and Industrial Education, reports an inactive fireman's training program in the past year. However, the 1960 session of the Mississippi Legislature approved an act to authorize the Vocational Division of the State Department of Education to establish and supervise a school for the training and education of municipal, county and industrial firemen. The proposed school is to be conducted annually in the city of Jackson with the cooperation of the Mississippi State Firemen's Association. Funds have been appropriated and significant expansion of the firemen's training program is expected in the future.

Missouri: W. Bush Walden, Administrative Assistant in Firemanship Training, reports that 1,035 firemen took part in the training program last year, with 341 attending the Missouri State Fire School. Officers' training and driver training were included as new courses. Basic and advanced training was given to 931 firemen in 74 local classes, while 240 fire departments were represented by their members in the regional conferences.

Montana: W. Lyle Roeseler, State Supervisor, Trade and Industrial Education, reports that 914 firemen received training last year. Additional training films were purchased and an attempt is being made to secure an additional instructor.

Nebraska: William A. Berens, Chief State Fire Engineering Instructor, Department of Vocational Education, reports that 1,675 firemen took the regular 18-hour training course last year. Nine hundred and four firemen from 192 towns attended the 3-day Annual Nebraska State Fire School. In addition, there were thirteen 1-day mutual aid schools and three 20-hour courses for pump operators.

Special courses were: pre-fire planning and operations on large scale fires and the burning of actual structures including dwellings and grain elevators. Communications and the hazards of atomic materials, liquid oxygen and combustible metals were included in the new training. Industrial fire brigades received instruction in two 18-hour courses. A useful new training device is a fire pump primer trainer. Other training aids developed include short sections of different makes of ladders with all "hardware," fire hose samples, slides and motion picture films of fire control tests and demonstrations. Present plans are to expand on training for industrial fire brigades, instructor training and training for water rescue and recovery.

Nevada: H. B. Matherly, State Firemen Training Instructor, reports that 617 men received training last year through the itinerant training program. Flammable liquid fires and structural fires were demonstrated for volunteer fire departments. In-training was given to industrial fire brigades at two locations.

New York: Acting Director George H. Proper, Jr., reported that 13,304 firemen received training last year. While New York State does not have an annual fire school, the Eleventh Annual Fire Instructors' Conference held in Rochester was attended by 90 county fire instructors, and plans were made for new instructor training courses in fire investigation and pump operations. A new set of courses on the essentials of firemanship has been included in the training program.

In the summer, Charles R. Dorman was appointed chief of the New York Division of Fire Safety.

North Carolina: Chief Charles L. Burkett, director of the North Carolina Fire College and Pump School, reports that 2,580 men took part in the program last year, with 195 attending the Annual State Fire School and 62 attending the Fire Prevention Bureau School. New training classes were conducted on aircraft crash rescue, instructor's training, officers' training and rural fire department operation. Thirty-two fire control tests or demonstrations also were incorporated in the training program. The North Carolina Fire College has adopted the manuals of Oklahoma State University as guides for basic instruction. Plans call for the addition of two additional instructors to the training staff.

Nova Scotia: Fire Marshal K. J. Partington reports that this province does not have a permanent fire training center or provincial traveling instructor. The fire marshal and his deputies assist in fire department training by conducting regional fire schools and training exercises in various parts of the province. For example, a regional training school was held at Middleton with 30 men selected from 6 fire departments receiving instructor training. The Halifax County Fire Chiefs held a demonstration fire school with 150 men attending from 12 fire departments. Special attention was given to LP-Gas, flammable liquids, resuscitation and salvage. Deputy fire marshals also held individual training for ten new or reorganized departments.

Ohio: Byrl R. Shoemaker, Supervisor, Trade and Industrial Education Service, reports that 6,542 firemen received training last year. Basic training was given by 95 instructors to 2,481 men enrolled in 138 classes. Seventeen regional schools were conducted for 2,833 men. Three hundred and twenty-eight fire officers enrolled in 24 classes, and squad training was given to 900 men in 29 classes. In addition, special training was given to 148 instructors, 16 officers and 18 squad men.

Oklahoma: R. J. Douglas, head of the Fire Protection Department, Oklahoma State University, Stillwater, reports that 2,408 men took part in the training program last year, with 160 men from 53 fire departments attending the Oklahoma State Fire School. Special courses were held for company officers, instructors and rookies, and 7 men took a 60-hour course in fire hazard control. In addition, state and local instructors gave training to members of 150 fire departments in the state.

Oregon: Elmer H. Halstead, State Supervisor, Public Service Training, Division of Vocational Education, reports that 2,036 firemen received training last year. While there was no state-wide fire school, the Annual Oil Fire Control School had an attendance of 425. Twenty-two pre-service and seven in-service fire department instructors attended the instructor-training school, and 83 pre-service and 33 in-service instructors took a special course in pumps and hydraulics. A County Fire Officers' Seminar had 65 attending, and 611 men registered for the training in fire department pumpers and hydraulics. Radiation hazards, mutual aid and radio procedures were among other new courses included in the new training program. Altogether, 41 buildings were used for test and demonstration fires and training. Plans call for the development of an "Instructors' Work Shop" for part-time instructors.

Pennsylvania: Arthur W. Espey, Supervisor, Fire Training, Public Service Institute, reports that a total of 10,053 firemen took part in the training program last year. Of this amount, 524 attended the Annual State Fire School, 7,958 took part in 25 county or regional fire schools, 731 took part in resident classes at the State Fire School (courses varied from 8 hours to 40 hours each), and 840 were trained at the local level in a 15-week course on fundamentals of fire fighting. Instructor training and a course on radiation hazards were included in the State Fire School program.

ANNUAL STATE-WIDE FIRE SCHOOLS
1959

State	Firemen Attend.	No. Years Held
Alabama	126	24
Arizona	146	7
Colorado	927	27
Connecticut	249	19
Delaware	290	12
Georgia	—	9
Idaho	207	11
Illinois	757	36
Indiana	164	36
Iowa	550	36
Kansas	305	30
Kentucky	722	26
Louisiana	104	5
Maryland	334	27
Michigan	234	32
Minnesota	4,480	32
Missouri	341	—
Nebraska	904	23
North Carolina	195	31
Ohio	182	15
Oklahoma	160	27
Pennsylvania	524	21
South Dakota	422	31
Tennessee	94	17
Texas	1,067	31
Virginia	460	14
Washington	452	29
West Virginia	213	29
Total	14,609	

Quebec: Provincial Fire Commissioner Edouard Gaudette, *Ing. P.*, reports that the training program reached 2,544 men last year. Principal attention was given to the use of fog nozzles with the traveling instructors generally using the equipment in individual fire departments. This form of instruction has been successful and plans call for increasing the number of inspector-instructors.

Saskatchewan: A. I. Dron, Deputy Fire Commissioner, reports that the chief fire instructor and his assistant conducted a number of classes throughout the province for volunteer firemen. Altogether there were 29 of these training classes, which brought a total attendance of 1,008, with 408 men receiving certificates of completion. Each fall a Fire Department Instructors' Course is held at Civil Defence Quarters at Fort Qu'Appelle. Plans call for the acquisition of a new mobile training unit together with the addition of another instructor and the development of a more advanced course of training.

South Dakota: Francis W. Pyncheon, Secretary of the South Dakota State Firemen's Association, reports that 422 firemen from 69 towns registered at the Annual Fire School at Chamberlain. Training items covered included fire department administration, inspection, the development of mutual aid agreements, the problems of fire department training and the mechanics of fire department operation.

Tennessee: Homer S. Elkins, Instructor-Coordinator, Fire Service Training, reports that 581 men received training last year, with 94 attending the Sixteenth Annual Tennessee State Fire Service School. Special courses were conducted for fire department instructors, industrial fire brigades, pump operators and maintenance mechanics and for officers and men interested in the handling of radioactive materials. Training was also given to institutional and industrial fire brigades with the cooperation of local fire chiefs. The State Fire School has obtained a pumper, several wheeled type extinguishers, salvage covers, nozzles and other equipment to improve the instruction. Long range plans call for a dormitory and new classrooms at the Fire College.

Texas: Henry D. Smith, Chief, Texas Firemen's Training School, reports that 3,768 men received training last year, with 1,067 participating in the Annual Texas Fire School. Special schools were attended by 657 fire fighters and itinerant training was given to 2,044. An administrative course was held for fire officers, a pump maintenance course was given to master mechanics, and another special course was held for fire department instructors. In addition, 94 men registered for the industrial fire protection course at the annual school.

(*Continued on page 26*)

HOW TO IDENTIFY FIRE CAUSES

From a talk "Recognizing Where Arson Exists" by Chief Investigator C. W. Stickney of the Portland, Oregon, Fire Department, given at the Fire Service Command School in Yakima, Washington

Part II of a Series

IN ORDER to understand the manner and probability of ignition from low-temperature heat sources up to about 800 degrees Fahrenheit in usual everyday conditions, we must consider several factors. Besides the combustibility of the fuel there is the insulation factor created by density and depth of fuel, the duration of exposure to the heat, the flash point (the temperature at which a material will give off sufficient vapors to flash when heated by an outside agency, but will not continue to burn), and the ignition temperature (the temperature which will cause self-sustained combustion of a material independent of the heating element). The explosive range, or limits of flammability, is the range wherein the vapor to air mixture is of the right proportion to be flammable.

When heat as low as 250 degrees F. is applied to cellulose materials such as wood, for a long period of time, pyrophoric carbon is formed which absorbs oxygen rapidly and has a tendency to self-heating. This tendency to self-heating becomes an important factor when large quantities of carbon are involved. Conditions of this type are encountered when light globes or steampipes have rested against heavy wooden timbers for a long period of time forming a considerable depth of carbon which has a much lower ignition temperature than wood. This depth of pyrophoric carbon with its tendency to self-heating, combined with the heat of the electric bulb or steampipes, can cause fires with temperatures as low as 250 degrees F. This is a rather rare occurrence and it takes many months, or years, for this action to result in fire. It is usually evident in a fire investigation by a large charred-out section several inches in depth at the base, or point of origin, of the fire.

When low-temperature heat devices are in contact with a thin layer of combustibles for a sufficient period of time, the material usually carbonizes and turns to ash clear through at the point of contact and, in effect, burns clear. Examples of this would be a light globe against a thin layer of paper or cloth — a cigarette lying on a flat layer of paper or cloth. If the depth of dense, finely divided combustible is about ¼ in. or more, or several inches in less dense material, then it insulates the heat and usually goes into a glowing or smoldering condition which may break into flaming combustion when it reaches a larger bulk of combustibles, or if fanned to extra heat by a draft. The time involved with these devices runs from about 1½ hours with cigarettes to many months or years with carbonizing of heavy timbers by electric lamps and steampipes.

TEMPERATURE TABLES OF SLOW-HEATING DEVICES

Electric Lamps

	Approx. Surface Temp. of Bulb	*Approx. Filament Temperature*
40 to 100 watts	200° F.	4,550° F.
150 to 200 watts	295° F.	4,725° F.
300 to 500 watts	380° F.	4,830° F.
250 watt heat lamp	400° F.	

Temperature of Saturated Steampipes

Gauge Pressure	
10 lbs.	240° F.
15 lbs.	250° F.
20 lbs.	259° F.
25 lbs.	268° F.
30 lbs.	275° F.
50 lbs.	297° F.

Ignition Temperatures

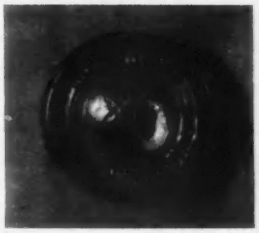
Douglas Fir Shavings	500° F.
White Pine Shavings	502° F.
Spruce Shavings	507° F.
Cotton Batting — Roll	446° F.
Viscose Rayon — Roll	536° F.
Fir and similar wood chars or burns at the rate of about 1 in. in 45 minutes per side of exposure to an average flaming combustion temperature of about	1,400° F.

It must be remembered that the above ignition figures are for fine material heated on all sides at once; and, even so, these figures are the lowest average at which *glowing* takes place — not the point at which flaming combustion occurs. With these temperatures applied in a small area against one surface only, a board or timber would usually take many hours to ignite. In most cases, glowing combustion, started in small quantities of sawdust or shavings, would consume the mass and go out without reaching the flaming stage. In larger quantities it would either smolder into the pile, where the heat would be insulated and built up to a higher degree, or a draft would fan the glowing to a higher degree. In either case, when the temperature reaches around 1,000 degrees F., flaming combustion takes place.

If in flaming combustion it is the vapors of the heated material that burn, then it appears that flaming combustion would not occur until the ignition temperature of the vapors being given off is reached.

Usual appearance of fuse caused from overload or partial shorting.

Usual appearance of fuse caused from dead short.



Although flash points of solids are not usually given, it seems easier to understand the reaction of slow heat on combustible materials. Just remember that combustion is rapid oxidation; that all common materials oxidize and vaporize and give off a specific quantity of heat — even though too slowly to measure, as in rusting iron and weathering boards. When very low heat is applied to wood, the vapors given off do not reach their ignition point; and, in any event, are not in sufficient volume to be within the explosive range or range of flammability. When a little higher heat is applied — say 600 to 700 degrees F. — the volume of combustible vapors may be sufficient to be within the flammable range near the source of heat; but since most vapors from wood, cotton, etc., have an even higher ignition point, around 800 to 1,000 degrees F., they do not ignite until they reach this temperature or until a flame or source of ignition is brought near the heating source where the vapors are rich enough to be within the flammable range. For example, if a slow-heating device such as a large electric soldering iron is placed when cold on a piece of newspaper, and then the current is turned on, slow rising heat can turn the paper to ash without igniting it — even though the tip of the iron becomes red hot. However, if an uncharred piece of this same type of paper is held against the tip after it is red hot, the paper will ignite instantly. This is another indication of the need, during fire investigation, to consider the time of exposure of combustible materials to sources of ignition.

Following are some of the factors to be considered during the investigation of fires suspected of being caused by electric lights, wiring and equipment.

Small wattage light globes have only slight potential of igniting layers of low-density combustibles that are resting against the globe, such as dresses, lamp shades, or papers. Closet and attic fires are often blamed on this, though most are incendiary or caused by children playing with matches. In Portland, we have had no known case, in recent years, of a closet fire from a light globe near combustibles; that is, since we started giving special attention to closet fires.

During the past three years we have refused to accept an "accidental" or "natural" cause for a closet fire until a thorough investigation has been made. During this time we found that in about 200 fires originating in closets 95 per cent were either incendiary or caused by juveniles playing with fire; 4½ per cent were undetermined (suspicious); and ½ per cent, or only two fires, were actually from "accidental" or "natural" causes.

In closets there are few accidental or natural sources of ignition; yet a surprising number of adult fire setters choose closets — probably attracted by the large amount of ignitable materials which would accelerate the fire after a source of ignition is supplied.

To juveniles, a closet is a hideaway, a sanctuary, a place to think or pout over their problems. It is also the place for playing with matches or lighters.

Even a 25 or 40 watt light globe can cause fire, however, if wrapped with several thicknesses of cheesecloth or tissue paper, or buried in finely-divided combustible material such as sawdust, since this retards the dissipation of heat from the light globe's element (which burns at about 4,500 degrees F.) and the temperature will quickly run up to about 800 to 900 degrees F. and cause flaming combustion — usually in about 20 to 30 minutes, depending on the thickness and density of the wrapping material. Seldom is a light globe wrapped or buried accidentally.

Accidental fires in sawdust are sometimes caused when people fill sawdust bins around light globes. This will cause flaming combustion in from 3 to 6 hours depending on the fineness and dryness of the dust and the depth to which the globe is buried.

Electric globes begin to swell and lose shape at about 900 degrees F. for 10 minutes or more. Above this temperature the glass will begin to flow.

If a fire originates from an electric bulb, the glass may be heavily stained with ash fragments of the material ignited stuck to the globe. A short circuit will often occur in or next to the lamp socket, indicated by a fusing of metal and a burned face on the fuse plug. The point of origin will usually be in the upper portion of the room, since lamps are usually used in that area. An important factor is time of exposure — usually requiring many hours, unless buried in the combustible material.

Electric clocks, even though destroyed by the fire, should be dug out and examined since the time they stopped can often be determined and help establish burning time, progress of the fire and involvement of electrical equipment. In this category are time-punch clocks; watchman's clocks; range, radio and kitchen clocks; and steam, fuel or other graphs.

When electric appliances such as automatic toasters, clothes irons, coffeepots and deep-fryers are suspected of causing fire the bi-metal thermal control or thermostat should be checked to see if the contact points are badly pitted or fused in a closed position. If so, this would allow overheating of the device. These points often become carbonized or dirty, preventing complete closing. This causes an arcing between the points with resulting pitting or sticking, and sometimes complete fusing together of the contact points. Contact points that were closed during the fire will have clean or unstained faces.

Always check fuse plugs. It can generally be assumed that a full short circuit will burn the face of glass fuse plugs; while overloads or partial shorting will melt or burn the fuse band through without blackening or burning the face of the plug. The condition of the plug may corroborate your findings at the point of origin.

An electric arc or short circuit can create a temperature of 7,000 degrees F. or more. This intense heat will cause fusing or beading of copper wire conductors. If this condition is found at the point of origin it may indicate shorting or grounding as the cause of the fire, if corroborated by other factors.

Copper wires when heated to around 2,000 degrees F. will burn through without fusing. In this case the ends will be pointed or ragged-looking. When conduit pipes are burned through from short circuits the fused metal will usually form lips around the burned-out area on the opposite side from which the short occurred. Brass — such as fuse bases — will show heat colors when heated to around 400 degrees F. Sometimes the par-

tially burned insulation of copper conductor wires will indicate whether the heat was internal or external. *Internal heating* of the copper wire, as from heavy or prolonged overloads, tends to burn away the insulation next to the wire and the remaining insulation will be loose on the wire like a sleeve. Sometimes there will also be swelling or bubbles on the remaining insulation, caused from the vapors of the inner layer of insulation. *Exterior heat* burns the outer insulation first; and if any insulation is left, it will soften and adhere to the wire. An exception to this is when the wires have been subjected to a very slow, bake-oven type of heat or fire. This sleeve condition is most indicative when found at the perimeter of a fire; and particularly when it can be compared to another circuit which was subjected to the same heating conditions.

Electric clothes irons use from 500 to 1,000 watts. Those produced during the past 10 or 15 years are regulated with thermostats with a top heat of about 450 degrees F. Tests run with this type iron operating at top temperature when flat on a padded ironing board showed the padding, after 3 hours, had just charred through, and there was slight browning to the wooden board beneath the iron. There was no sign of glowing or smoldering, and no lateral spread or charring. If such an iron is suspected, check the thermal control points for fusing. If control is operating, it would appear difficult to cause a fire with this type of iron; and, in any event, would require probably 8 to 10 hours, or more.

Irons without thermal controls and of average size, about 600 watts, when tested, charred about ⅝ in. of wood per hour. Temperature was 800 degrees F. beneath the iron. There was no lateral spread of charring and no glowing in the fir board (due to lack of oxygen beneath the iron sole plate) — slight glowing in padding at start of test went out. Smoldering and then flaming combustion may occur in 2 to 3 hours when charring breaks through the bottom of a board.

Soldering irons of 100 to 125 watts produce temperatures of 600 to 800 degrees F. They are not thermal controlled. The small 600 degree F. iron operated for 10 hours on dry fir board charred only ½ in. — no smoldering occurred. The 800 degree F. iron operated for 3 hours, charred 1½ in. in 3 hours — slight smoldering after 1 hour; steady smoldering after 2 hours. Flaming occurred at 3½ hours when iron burned through bottom of board. Paper and cloth laid flat on board under iron were reduced to ash under the iron and had no further action. When several layers of crumpled paper or cotton cloth were placed around or on top of the iron flaming combustion occurred in 15 to 30 minutes.

Electric Motors

If the shaft is frozen to the bronze bearing of an electric motor, it is a pretty good indication that the motor burned internally. If the bearing becomes heated from friction against the steel shaft, the temperature on the surface of the bearing can easily run up to the melting point of the bearing — around 1,800 degrees F. and fuse to the shaft. Fires from other sources in the building are very unlikely to cause this condition; first, because in average fires temperatures run about 1,600 degrees F. and this in the upper portions of the building, whereas motors are usually installed near floor level where the fire temperatures run about 300 to 500 degrees F. If temperatures did rise to 1,800 degrees F. or more around the motor this high temperature would probably have to continue for 10 to 15 minutes to heat through the cast-iron housing of the bearing, and it is doubtful if the melting bronze would even then fuse to the steel shaft because the oil film between shaft and bearing would carbonize and tend to prevent this.

Motor overload fuses should be checked to see if they are of proper size. If a motor has thermal control, check the contact points for sticking or fusing.

If the motor was running during the fire, this may be indicated by bits of solder thrown out of the commutator or armature onto the interior of the motor housing.

Friction is indicated if the motor belt is most heavily damaged where it passes over pulleys. Fire from other sources damages motor belts much more in between pulleys, and often does little damage to the belt where the belt is protected by the pulleys.

Check the wire coating at the interior of motor windings. Except in very hot, prolonged fires, this wire coating does not burn away unless the motor has burned out.

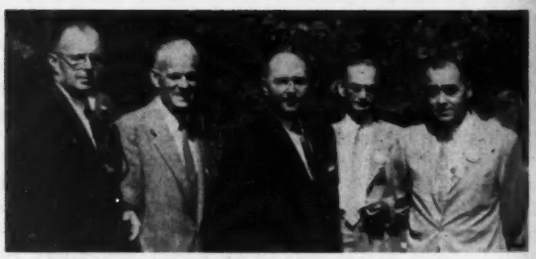
If, immediately after a fire, the motor housing is too hot to touch but iron or steel of similar size in the same area is relatively cool, it would indicate interior heating or burning out of the motor. Motors of fractional horsepower are designed to operate at about 140 degrees F.

Recessed ceiling light fixtures, if improperly insulated, often cause fire in joists, insulation, acoustical tile, accumulations of lint, sawdust collected on fixture housing, etc. These are slow-starting, and are usually characterized by the point of origin in the ceiling area and a large amount of heavy charring at this point.

Fluorescent light fixtures often cause fires from a breakdown in the ballast transformers containing a flammable pitchblende. These ballasts have a starting voltage of from 700 to 900 volts, and operate at about 400 volts. They are designed to operate continuously at 194 degrees F., but often the temperature goes much higher than this. This heat may cause a melting and vaporizing of the combustible contents of the ballast, sometimes igniting combustible ceiling material; and sometimes these vapors collect and ignite in the housing — or occasionally explode, ripping the fixture apart. These ballast transformers are designed to last about 15 years, and many of the older fixtures still in use are beginning to break down at this time.

Television booster tubes occasionally cause fires. Some of them double the voltage, which greatly increases the heat and may ignite the cabinet or curtains, etc., at the back of the set. This increased voltage also may overload and break down the transformers.

(*Continued next month*)



Meeting at Corner Brook

The Maritime Chiefs' Convention this year was held at Corner Brook, Newfoundland, this summer. Shown above, at one of the outdoor sessions, are Warren Y. Kimball, manager, NFPA Fire Service Department; C. Grey Burnett, National Research Council of Canada; Mayor Allison Bugden, Corner Brook, and Arthur Boyer and Alfred Stone, directors of Wilson and Cousins, Ltd., Toronto, Ontario.

"What d'ye mean — there's no water?"

If you stare at this picture long enough, you're bound to see someone you know. This is "Major," a boxer dog owned by Fire Chief Frederick Beal of Ellsworth, Maine, showing just the right facial expression for effective fire ground command. (*Wide World Photo*)

THE FLORIDA STATE FIRE COLLEGE

From the May, 1960, issue of *Florida Municipal Record*

by W. H. Barnett, Superintendent, Florida State Fire College

THE primary purpose of the fire service is to reduce the loss of life and property from the hazards of fire. One of the most important and effective means of accomplishing this purpose is through practical training.

Some years ago the firemen of Florida realized the vital need for a state-wide training program. Apparently a state training center was needed where firemen from all communities could meet and share their experiences. After a great deal of planning, the first fire school was held in 1930, lasting three days. During the years following until 1947, one-week sessions were held annually. This training, without a doubt, was very beneficial, but fell far short of meeting the needs of the fire service. In 1949, the Florida State Firemen's Association took the problem to the State Legislature. They were successful in having legislation enacted that created the Florida State Fire College as a state maintained institution that operates on a full-time annual schedule.

Systematic, standardized training can be accomplished only through sound planning and coordination. This is true in local as well as regional and state-wide programs. A large fire department, having its own training program, would not dream of concentrating its activities upon a portion of its personnel, while ignoring the other portion. If this were the practice, we can imagine the chaos that would be created during multiple company operations. The department that has a systematic training program consisting of standard procedures makes sure that all its personnel receives the same attention.

Let us now consider a different, but somewhat similar situation. Picture a county with, say, twelve individual communities, each having its own fire department. Each department consists of a single unit or company. In the majority of instances, this single unit can handle fires occurring within its own boundaries. What happens, however, when a fire of large proportion occurs? In order to avoid a total loss of perhaps the entire community, neighboring units must be called upon. If these units are not all trained in the same standard procedures and their equipment and facilities are not standardized, the same chaos as in the large department operating under the same conditions, will result. The same thing applies to the entire state, made up of its sixty-seven counties.

The Florida State Fire College, through its state-wide coordinated training program, conducts the same standard training in each community. This assures more efficient fire protection throughout the entire state. The result of this training has been reflected quite a number of times when communities have been called upon to help their neighbor. Some time ago, a fire of quite large proportions occurred in one of our smaller communities. Involved were a furniture store and apartments. The potential life, as well as property loss, was quite high. Every individual department within the county in which this community is located had received the training conducted by the Fire College. A very good mutual aid system had been planned and was put into operation for this fire. The results were very gratifying. As the chief said, all departments functioned with the same standard procedures and evolutions. In his own words, "it looked like a well-trained big city fire department operating."

We do not want anyone to get the impression that the Fire College serves only smaller departments. This is far from the truth. The state is made up of full paid, part paid, and fully volunteer fire departments. It is obvious that fires occurring in a community having a fully volunteer department are just as hazardous and costly as those occurring in one having a full paid department. It is also true that generally the full paid department is better equipped to handle emergencies as far as equipment and man power is concerned.

Training in all phases of fire protection is conducted by the Fire College throughout the entire year. Again, due to local situations this training, to be most effective, must be conducted in several ways. The paid firemen can devote more time to their training than can the volunteers. Complete training is necessary for all firemen; therefore, it will take a longer period of time to fulfill the needs of those who can devote only their spare time to the important job of saving life and property. It is up to those responsible for coordinating the state training program to develop ways and means by which this can be accomplished.

To treat this situation, the Fire College has developed several types of classes. These are classified as *Unit Training, Itinerant Training and Special Training. Unit Training* is divided into two groups — namely, the 100 Series and the 200 Series. The 100 Series covers subjects every fireman should know and includes such items as tools, forcible entry, breathing apparatus, ladders, hose, fire streams, apparatus, inspection, salvage and overhaul, and ventilation. The 200 Series covers teacher training, fire prevention, company officer training, fire fighting tactics, administration, etc. One week, consisting of thirty hours, is required for each unit taken. After a man has received five units in either series, he receives a diploma for that series. A unit taken in one series does not apply toward a diploma in the other. All units are taught at the Fire College and some are taught in the field in local fire departments. Many volunteer firemen attend the sessions conducted at the Fire College. Due to their regular day-time work, however, it is not practical for them to hold these classes in their local department.

Three views of Florida Fire College. Lower left, drill tower. Top left, fire training building. Top right, aerial view of training grounds.

The *Itinerant Training* classes have been developed to alleviate this situation. The *Itinerant* program consists of fifteen hours, three hours each night Monday through Friday. This is about all the time the volunteer can devote to his training any week. Equipment owned by the local department, plus some carried by the instructor, is used in this training. The subjects included in the training consist of the things the particular department needs most at the time the class is conducted. The training, however, follows the same basic pattern for all departments. Here again the Fire College serves by promoting fire inspection and fire prevention programs. A great many of our volunteer departments now have good inspection programs and realize the importance of good fire prevention practices. We are striving toward the goal where every community in our state will have its own fire prevention program.

At present the Fire College is conducting *Special Training* annually in the following subjects: an arson seminar, an LP-Gas conference, a class in heating and air conditioning, a class in fire pump maintenance for fire department mechanics, and the Florida Fire Service Training Improvement Conference. Other classes in fire protection and prevention and evacuation procedures are conducted for industry, schools, hospitals, nursing homes and other institutions throughout the year.

A progress report delivered before the 1956 Annual Fire Prevention Conference in West Palm Beach by the Committee on Building Construction and Protection, revealed that fire insurance rate reductions for the years 1949 through 1955 represented premium dollar savings to Florida policyholders of $9,079,000. The report further stated that a May, 1956, reduction effected an estimated savings of $2,208,900, in other words, a total of $11,287,900 in premiums saved by Florida policyholders during the period from 1949 to 1956. It should also be mentioned that the committee report stated:

While it is perhaps impossible to measure the exact influence the Florida Fire College has had on rate reductions through the part it plays in the fire service, it might at least be assumed with authority that the State Fire College has played an important role in securing lower insurance rates through teaching effective techniques for saving life and property from loss by fire.

Another service prominent with the State Fire College is advising and assisting in the organization of new fire departments and training of personnel throughout the state. This in itself plays a large part in saving life and property from destruction by fire.

In some instances it is necessary that a fire district be created and the necessity of doing this has been impressed on interested groups by lectures given by staff members of the College.

Further, there are approximately 7,500 firemen in the State of Florida and only about 40 per cent of these have the opportunity of instruction in proper fire fighting and control techniques from instructors within the individual department itself, supplemented by more advanced instruction by the Florida Fire College.

The remaining 60 per cent are volunteer firemen and are dependent entirely upon instruction afforded by the College.

Recently it was reported from this same source that premiums had been reduced again, which would mean an additional saving of over three million dollars annually to policyholders in Florida.

From this we can readily understand the importance of a state coordinated training program for fire departments.

T. Seddon Duke, Chairman, NFPA Board of Directors, was featured speaker at the dedication of this beautiful and practical new fire station and community center in Fairless Hills.

FAIRLESS HILLS STATION COMPLETELY SPRINKLERED

Volunteers build modern structure for fire department service and social activities.
(A report from William Sweeney, president, Fairless Hills Volunteer Fire Company.)

ON AUGUST 7, the Fairless Hills, Pennsylvania, Volunteer Fire Company, dedicated a new completely sprinklered fire station. Built for $150,000 the station is in the center of the village, adjacent to the shopping center, with convenient access to three major roadways. It has an interior area of 11,000 square feet and was designed, built and equipped to provide for two major community assets — headquarters for the fire company and a flexible, multi-use space for community activities.

Fairless Hills is a part of Falls Township and serves a community of approximately 6,000 residents. Many modern dwellings, five schools, two churches, a modern shopping center and numerous businesses are located in the company's fire district.

The volunteer fire company has grown steadily, principally because the Township population has grown from 3,540 in 1950 to 28,926 in 1960.

In the new building, the headquarters wing of approximately 2,600 square feet has a 50 by 32 ft. apparatus room, a 24 by 16 ft. room for hose storage and drying, an office and a radio room. Two double bay overhead garage doors operate manually and electrically. Both open automatically when the fire siren is sounded; on an electric circuit they also can be opened individually by key from the exterior and manually from inside the apparatus room. Sky-domes are on the roof and, with maximum glass area in the doors, the apparatus is continually in view of the public. The apparatus room is equipped with overhead booster tank fill pipes and a center floor drain running the length of the room. The hose room contains facilities for the storage of necessary parts and service items for the apparatus and equipment and an electric hose washer and dryer.

The 54 by 100 ft. community hall has two floor-to-ceiling folding partitions for dividing this room into two or three smaller areas. The hall is fully air-conditioned by three roof-mounted units individually controlled from within each area. A sound system has been provided and may also be operated for each or all of the divided areas. In keeping with this flexibility of use, the hall floor can be used for roller skating, dancing, banquets and meetings.

A service wing, separating the fire station from the hall, acts as main entrance and distributes interior circulation between the three main areas. Its 3,000 square feet of space includes rest rooms, boiler room, check and storage room, a game room and a fully equipped kitchen. The game room is for use of the firemen as a lounge and is air conditioned. The kitchen equipment was bought, donated to the company and is operated by the Ladies' Auxiliary.

The entire building is constructed of fire-resistive material and all portions are protected by an automatic sprinkler system. The headquarters wing, housing the fire apparatus, is separated from the service wing and community by a fire wall with access through an automatically closing fire door. An automatic emergency generator provides power for the emergency lighting, radio and alarm equipment.

The dedication of this building has climaxed nine years of rapid and progressive growth of the Fairless Hills Volunteer Fire Company.

Members of the fire company, on December 10, 1951, approved the adoption of a constitution and by-laws and elected temporary officers. The company was incorporated in March, 1952, and the Danherst Corporation, building contractors in Fairless Hills, donated a 1923 Seagrave pumper. This corporation also made the original fire station available. Early in 1952 a 750 gpm Ward LaFrance pumper was delivered to the

company. During the next year the original fire station was enlarged and improved by members of the company. In the Fall of 1953 the Seagrave pumper "earned its keep" by pumping continuously at Curtis Lake for 72 hours to supply Fairless Hills with water when the regular pumping equipment broke down.

During the flood of August, 1955, the company spent many man-hours assisting nearby communities that were engulfed by the high waters of the Delaware River. In the same year, the company designed and ordered a combination aerial and squad truck. This apparatus was delivered in March, 1956.

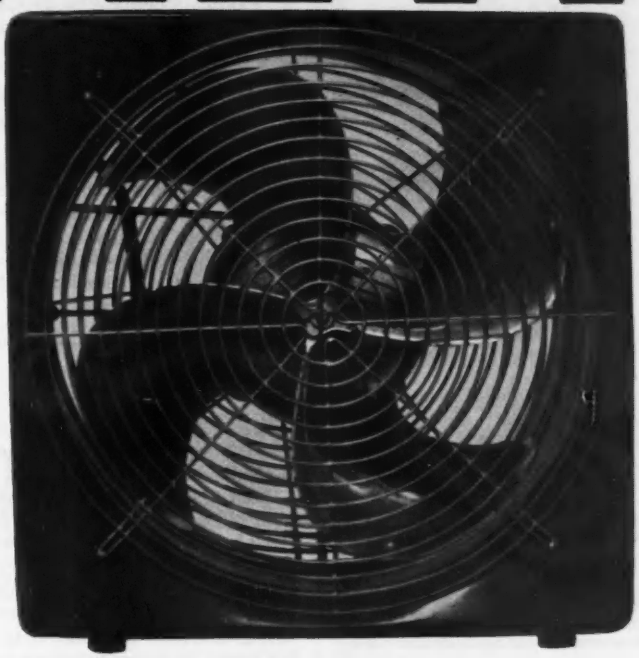
During the Fall of 1956 the Ward LaFrance pumper was involved in an accident and a new 750 gpm Mack pumper was ordered. A 500 gpm Diamond T pumper was loaned to the company until delivery of the new pumper.

In January, 1957, the U. S. Steel Corporation gave a Jeep station wagon to the fire company. In May of this year the Seagrave pumper was retired from service and the Diamond T was bought as a replacement.

Early in 1958 a building fund was established and by the end of the year it had grown to $15,000. The architectural firm of Diehl & Stein was given the job of drawing up plans and specifications for a new fire house and in August, 1959, a building contract was awarded to the Ranieri Construction Company. A donation of $53,000 from the U. S. Steel Foundation was added to the building fund.

O.K., wise guy, you can knock off the dramatics now and serve the chow.

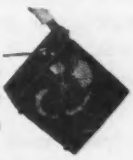
NEW



PLUS 21 4 BLADE DESIGN

HERE IS *REAL* PULLING POWER in the new Super Vac series Smoke Ejectors for fire and rescue work! Redesigned with four blades, the one-piece, cast aluminum propeller now increases the air volume over the entire blade area by 21% — a significant increase for emergency operations where seconds count. So fast, so efficient and so dependable is the "PLUS 21" propeller that it is now standard on all 12", 16" and 24" Smoke Ejectors. This means stepped up controlled ventilation of smoke-congested areas, faster rescue operations, greater safety margins.

New Shape Housing, Too!



New square-shape housing is rescue-designed for easier portability, greater strength, increased stability. It stands firmly on any of its 4 sides in emergency and carries easily (only one man) from any of its 4 corner handles.

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FIREMEN Magazine
60 Batterymarch Street
Boston 10, Mass.

Chief Elmer Schultz of the Yakima County Fire Protection District No. 5, Washington, wonders whether other fire departments have a problem in furnishing fire protection to property located on Indian reservations. The Yakima County Fire Protection District No. 5 covers an area of 602 square miles of which 311 square miles are within the Yakima Indian Reservation. Since Indians are wards of the United States Federal Government and pay no taxes, this has proved to be an extremely heavy burden upon the fire protection district and Chief Schultz would like to know how other fire departments faced with a similar problem handled this matter.

Award of Honor

THE first Award of Honor of Sparky's Fire Department has been made to a young girl.

Last January a courageous 13-year-old baby sitter in Nelson, British Columbia, coolly followed the lessons she had learned as a member of Sparky's Fire Department.

When fire broke out in the house where Darlene Hoffman was minding seven children for their parents, she tucked a 3-year-old under her arm, then guided the six others out of the smoke-filled house. Her quick thinking saved lives, according to Nelson Fire Department Chief E. S. Owens.

While Darlene was with some of the children in one room, a 4-year-old got hold of some matches and set fire to papers in a bedroom closet. The fire got a good start and smoke filled the room by the time Darlene discovered it.

Quickly she got the children out of the bedroom. Carrying the smallest and leading the others from living room and kitchen, she herded all out the back door to safety.

After instructing the oldest to phone one of the parents on a neighbor's phone, and telling the rest to stay put, Darlene sounded the alarm to the fire department.

The emergency was over by the time the mother arrived home after fire fighters had put out the blaze.

Darlene was pale, calm and still "sparky."

On Tuesday, October 11, during Fire Prevention Week, Darlene stood before 1,000 students in the Nelson Jr. High School auditorium and received the Award of Honor of Sparky's Fire Department from the hands of Mayor T. S. Shorthouse. City aldermen and fire department officers were among the officials present at the ceremony.

Several thousand Nelson youngsters have been trained in the basic rules of personal and home fire safety since the Sparky's Fire Department was started there in 1957 by Chief Owens.

The Sparky's Fire Department Award of Honor is a handsome hand-lettered parchment in gold, red and black, carrying the metal badge of Sparky's Fire Department and the red NFPA seal. It reads:

"Award of Honor." "Darlene Hoffman is hereby commended for her outstanding courage and judgment in the face of a fire emergency exemplifying the highest standards of Sparky's Fire Department."

It is signed by Percy Bugbee as executive officer of the department for NFPA, and countersigned by Chief E. C. Owens as head of the Nelson Sparky's Fire Department, of which Darlene has been a member for two years.

Luther Waits Guthrie

CHIEF Luther Waits Guthrie, of the Atlanta, Georgia, Fire Department, died on September 18. Chief of Atlanta's fire department since June, 1958, Guthrie had joined the department in 1938 as a ladderman with Engine and Ladder Co. No. 5. In 1946, following Navy service in World War II, he returned to the department as a lieutenant. Two years later he rose to the rank of captain, then was promoted to acting battalion chief of the Second Battalion. Serious injuries incurred while fighting a fire in 1953 put him out of action for ten months, and while still in the hospital he passed a competitive examination to become battalion chief. He later was promoted to first assistant chief and finally, in 1958, to chief.

Sparky in Maryland

The first Sparky mannequin to be used by fire prevention agencies in the State of Maryland is shown being presented to Governor Millard Tawes (second from left) at the State House, Annapolis, Maryland. Shown with Gov. Tawes are (from left) Fire Marshal Charles H. Howe, Jr. of Montgomery County; Fire Marshal Lawrence R. Woltz of Prince George's County; and Joseph Schwartz, president of the Independent Insurance Agents Association of Montgomery and Prince George's Counties, which donated the mannequin. Sparky will be used to spread the message of fire prevention, particularly among school children. It is felt that Sparky's message will be a great help in preventing fires in the homes.

Firemen's Booklet on Gas

CHIEFS of fire departments in Massachusetts and representatives of the gas utility companies in the state collaborated to prepare an interesting booklet for distribution to fire departments in the state. Well illustrated and featuring simple language, it explains just what procedures a fire department should follow in various emergencies involving the leakage or ignition of gas. The booklet points out that fire departments should always call representatives of gas utility companies for such emergencies to assist in the location of gas shut-off valves and otherwise help in controlling the situation. Copies of the booklet are being made available to every fire department in Massachusetts by the gas companies servicing the various communities.

Fire departments in other states would do well to work with the gas companies in the preparation of similar guides on how to handle fires where gas services are installed.

CAIRNS LEATHER HELMETS

The "NEW YORKER" — No. 5A

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The CAIRNS "LIFE-GUARD" LINE also includes other leather helmets, in other styles and weights — as well as helmets in aluminum and FLINT-FLEX plastic in regulation and drop-brim styles.

Write for Catalog 360 showing everything a fireman needs for his personal equipment — together with Department Record Books, Secretary's Books, and printed forms.

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SINCE 1836

Mutual Aid in Nevada

by H. B. Matherly, Fire Service Instructor
Nevada State Board for Vocational Education, Carson City, Nevada

A NUMBER of mobile water tank vehicles and certain other units including brush fire fighting apparatus are currently in use in some areas in the state of Nevada. These vehicles and equipment have been supplied through the foresight and planning of George Zappettini, Nevada State Forester and Fire Warden.

Nevada has experienced a phenomenal growth in population during the past decade and with it has come a corresponding increase in the number of fires. A great number of these fires have occurred in remote regions which are distant from any water supply. Brush and range fires predominate. Occasionally there will be a structural fire.

During the past several years the Division of Forestry of the State of Nevada has acquired a number of vehicles through surplus channels. All of these vehicles are suitable for fire protection uses or may be suitably modified to conform to requirements of the fire service.

Included are gasoline tankers which have been purged of gasoline fumes as per U. S. Government specifications. Other equipment ranges in kind and size from small 4 x 4 personnel carriers to large semitrailer combinations with a few pieces of standard fire apparatus thrown in for good measure.

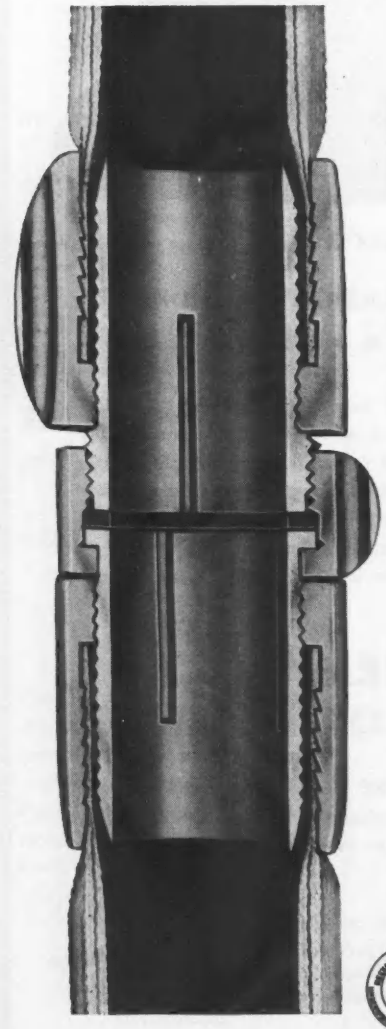
All of the vehicles are primarily furnished for range and forest fire protection. Tankers are particularly valuable because they can furnish an immediate source of water in sufficient quantity to control many ordinary fires.

The manner in which these vehicles are employed illustrates a practical example of mutual aid between communities and rural areas. Although the Nevada State Division of Forestry has been able to act as a procurement agency for fire fighting vehicles, it has neither the facilities nor the manpower to operate them. On the other hand, local fire department and fire districts are usually short of equipment but do have available manpower. Assignment of apparatus and equipment on a loan basis to local agencies has proven to be a most convenient means of providing fire protection for the rural and perimeter areas which they serve.

Most vehicles when received are in need of extensive repair. Local fire departments must assume the responsibility for reconditioning, maintenance, housing, insurance and manning. After these items have been satisfactorily completed, the apparatus or vehicle is then placed in service in accordance with existing mutual aid agreements between the Division of Forestry and the local fire agencies.

This arrangement has been satisfactory because range and forest fires usually endanger structures, and structural fires often involve adjoining forest and range lands. The additional water supply which is available on short notice has often been a deciding factor in controlling stubborn structural fires which would soon have spread into vast areas of brush and valuable timber.

It is, of course, desirable to have volunteer fire departments concentrate on structural fires where possible. Complete records on a statewide basis are not at hand, but a summary of the records of the Carson City and Reno districts indicates that there were a total of 67 forest and brush fires in that region during a typical six-month period. Units from departments in the area responded to at least half of these fires.



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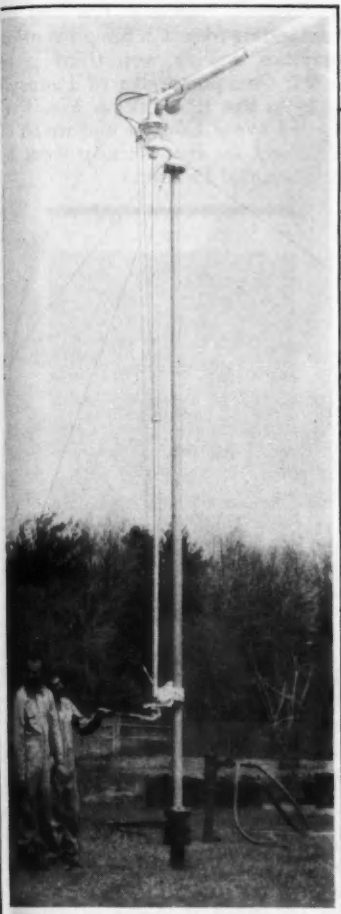
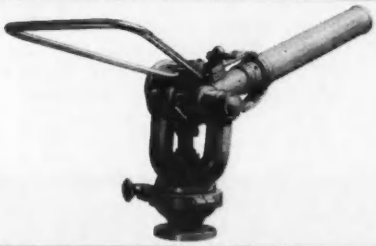
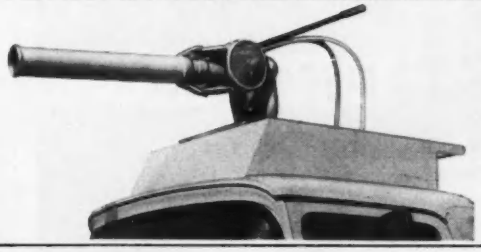


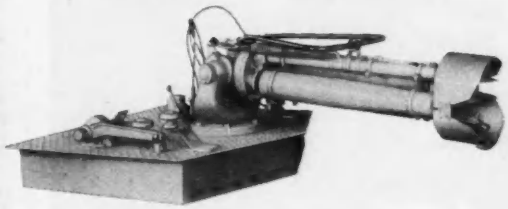
Extended Manual Control Type — Turret nozzles extend 10 to 20 feet above remote control station on deck or ground on standard units ... greater remote extensions for special applications.



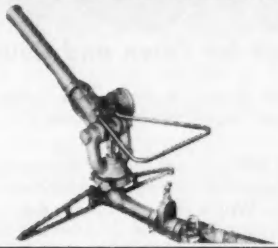
Direct Manual Control Type — Gives fire fighters "out-in-the-open" control from cab roof!



Remote Manual Control Type — Easily handled by man in driver's seat. Ideal for fast action!



Remote Hydraulic Control Type — Power-controlled from within the cab. Single and dual models. Widely used on air crash rescue fire-fighting trucks.



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History of the American Steam Fire Engine

AN INTERESTING book bearing the title *History of the American Steam Fire Engine* has just been issued by Owen Davies, Publisher, 1214 North LaSalle Street, Chicago 10, Illinois. This is a reprint of a rare book published in limited edition in 1896 by a fireman named William T. King. The new edition is 7½ x 10 inches in size, has 160 pages and over 85 woodcut drawings showing side views of steam fire engines and detail drawings of parts together with 30 photos.

The book includes dimensions, specifications and performance records of the steam fire engines of about forty-eight builders. The author, a working fireman, gathered information on steam fire engines built in the United States by Amoskeag, Button, La France, Clapp & Jones, American Fire Engine Co. and others, from the period between 1840 and 1896. The book contains much interesting data and is available in a paper-bound or cloth-bound edition. The regular edition is priced at $3.50, and the deluxe cloth edition is priced at $5.00. Postal charges are 14¢ per book. Copies may be ordered from the publisher at the above address.

The Fort Washington Fire Company No. 1 of Upper Dublin Township, Pennsylvania, recently lost two of its most valued members when their rowboat tipped over during a fishing trip. The men were Fire Marshal George L. Painter and Driver William H. Sands. The Fort Washington company has had an outstanding record in fire prevention activities, having won third place in the Commonwealth of Pennsylvania in the 1959 NFPA Fire Prevention Week Contest and much of the credit for this activity went to Fire Marshal Painter.

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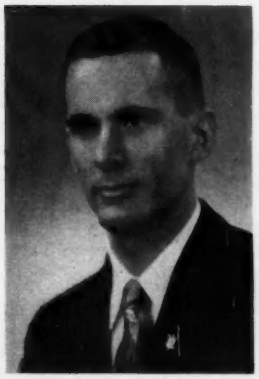


Maryland Appointment

THE Fire Protection Curriculum, University of Maryland, announces the appointment of Harry E. Hickey as Assistant Professor to the Fire Protection Department.

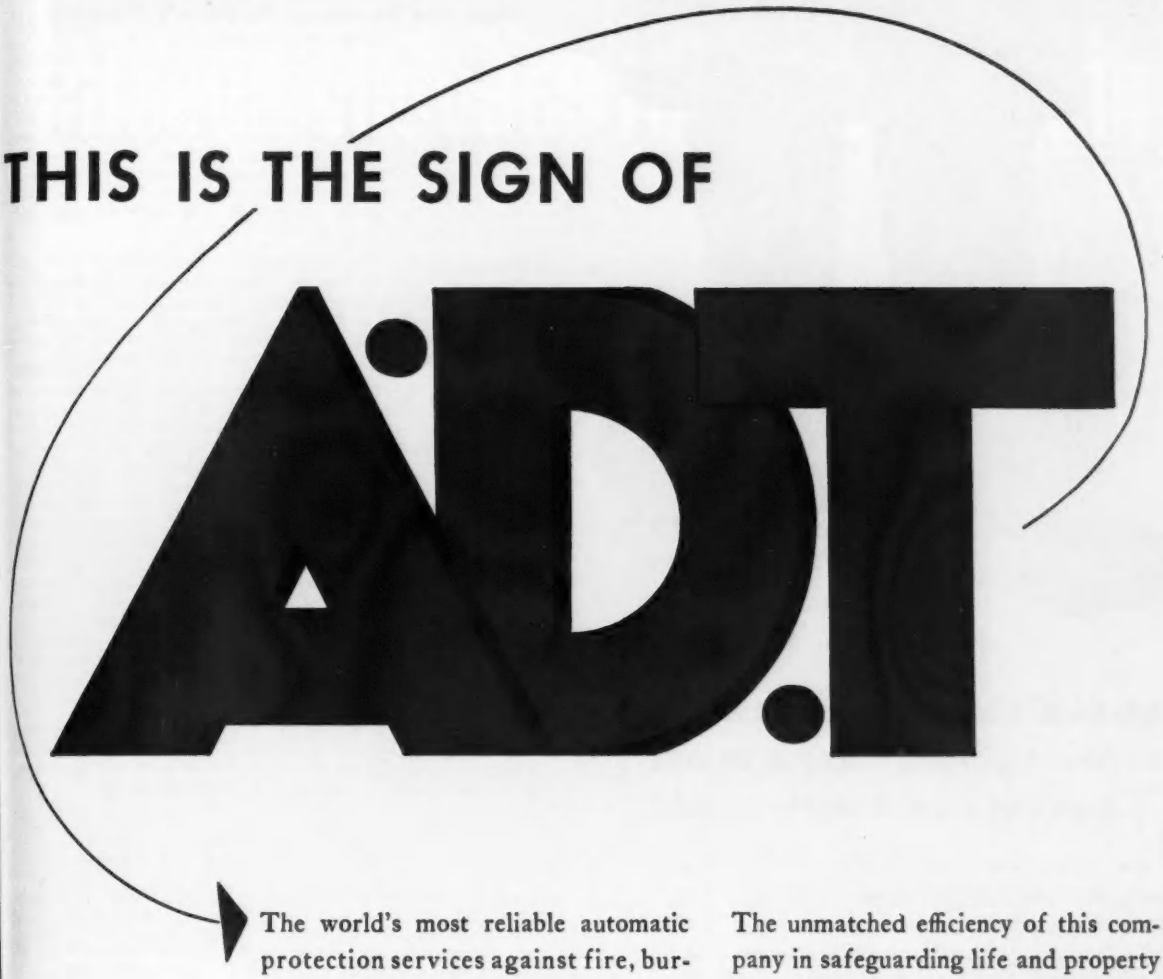
Hickey is a graduate of the School of Fire Protection, Oklahoma State University, where he received an Associate Degree in Fire Protection Technology. To this formal education he added Bachelor of Science and Master of Science Degrees from the State University of New York, Fredonia.

For the past twelve years, Hickey has been a member of paid and volunteer fire department groups. He has served in the fire department capacities of driver, fire warden, housing inspector and director of fire prevention. Most recently he held the line office of Lieutenant.

In February 1958, Hickey received an appointment to the position of Fire Instructor, New York State Bureau of Fire Mobilization and Control, now the Division of Fire Safety.

Last November, he was engaged as Director of Fire Administration for the Sterling Forest Corporation at Tuxedo, New York. He will continue as a fire protection consultant to this firm.

THIS IS THE SIGN OF



The world's most reliable automatic protection services against fire, burglary, holdup and other hazards.

It is the bane of burglars and arsonists, who recognize it as a formidable adversary. ADT subscribers from coast to coast are proud to display this monogram on their premises. It is a promise to their employees, customers and neighbors that they have provided the most dependable and modern service available to protect their lives, property and jobs.

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M-S-A Safety Insoles slip easily into any boot. Construction is three-ply. In between are two overlapping rows of tough steel strips. A layer of fabric, molded in rubber, covers each side of the metal strips. Here's a truly durable defense to stave off foot injuries.

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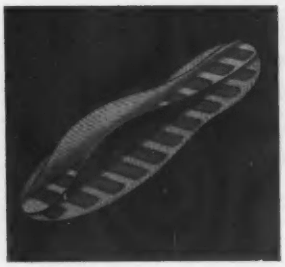


Diagram showing how insole protects the foot.

Fabric ply pulled back to reveal steel strips.

MSA SAFETY EQUIPMENT HEADQUARTERS

MSA backs up its label with selection, quality, research, experience

State and Provincial Firemen's Training

(*Continued from page 11*)

New training aids included sets of charts covering all types of pumps, which were made available to all instructors, and various visual aids on fire prevention. Plans call for an increase in the number of short courses at the fire school and a stepped up program on the use of radiological metering instruments. In June, directors of the Texas A&M College system designated the Texas Engineering Extension Service's new firemen's training area as the "Brayton Firemen Training Field." This was in honor of the late Col. H. R. Brayton, who, during his career, directed the training of an estimated 50,000 Texas firemen.

Virginia: Gordon H. Fallesen, Assistant State Supervisor, Trade and Industrial Education Service, State Department of Education, reports that 2,045 firemen received training last year, with 460 attending the Annual Fire School. Other special training schools brought 923 men. Among new training courses introduced was a 30-hour fireman instructor course at Virginia Polytechnic Institute.

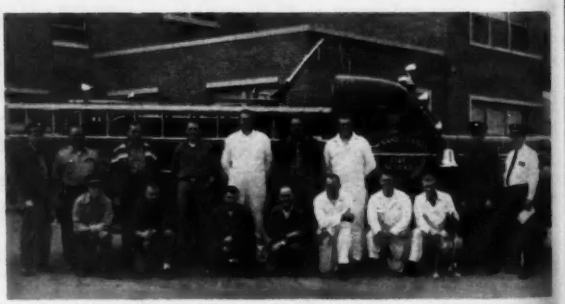
Washington: The firemen's training program in Washington is operated by the State Board of Vocational Education as part of Trade and Industrial Education. It is supported by funds appropriated by the State Legislature. The fire training staff consists of Supervisor of Fire Training Lyle Goodrich, a secretary and 32 part-time instructors from paid fire departments. Last year 1,239 firemen received training in 632 sessions, and 452 firemen registered for the annual fire school. In addition to regular training, the fire school also featured SCUBA diving, and driver training as new classes.

The Second Annual "Command School" in Yakima, had an enrollment of 150, with chief officers attending from Washington, Oregon, Idaho and Alaska. A special Grain Fire School was held at Walla Walla and Pasco in cooperation with the South Eastern Firemen's Association. Other training included: a school on fire department safety for the Whatcom County Firemen's Association, a class on hospital evacuation, an arson school, a special class on mutual aid and fire prevention classes.

West Virginia: R. E. Hanna, Jr., Assistant Director, Fire Service Extension, reports that 680 firemen took part in the program last year, with 213 attending the 29th Annual West Virginia Fire School. A new course in radiation hazards was a feature of the school.

Wisconsin: William E. Clark, Supervisor, Fire Service Training, reports that 4,671 firemen took part in the program last year. One hundred and nine fire departments took the 25-hour course in basic fire fighting, with certificates issued to 1,726 men. Wisconsin does not have an annual state fire school but held four regional schools which had an attendance totaling 951. Six other regional advanced fire protection schools were attended by 497 firemen and six short courses were held for 219 firemen. Special courses were also held on radiation hazards, industrial fire protection, and fire inspection.

Many fire control tests were conducted for training in fire combat and also to develop research on the following subjects: resistance of the human body to high temperatures, of fire protective clothing, controlling fire spread by ventilation, effect of ventilation upon the application of water fog, the rapidity of fire spread within dwelling rooms, the "ideal rate of flow" and rotation of nozzle and other subjects. A state-wide industrial fire protection institute was held at Milwaukee, and a pilot program of industrial fire brigade training was started. A new feature was an examination for part-time fire service instructors. Seventy-three men competed in this examination, which contained 175 questions. All previously accredited instructors were required to compete, and the examination was open to anyone qualified.



Staff members of the Pennsylvania State Fire School are wearing uniform caps. They are: (left, standing) Instructor Bob Grening, (kneeling) Technician Charles Filand, (inside cab) Instructor Earl LeFever, (right, beside bell) Instructor Dick Beatty, Jr., and (extreme right) Director Art Espey.

Chicago chooses Hi-Ranger again

to fight fire . . . save life . . . protect property

In 1959, the Chicago Fire Department purchased Hi-Ranger "Snorkels" for what proved to be a major break-through in fire fighting tactics. Hi-Ranger "Snorkels" proved so successful in fire fighting and rescue operations that Chicago has chosen Hi-Ranger again. Your city too, can have this kind of protection. Hi-Ranger has more experience in the design of "Snorkel" towers than any other designer or manufacturer. Let this experience work for your city NOW. A Hi-Ranger "Snorkel" representative is little further away than your telephone. We welcome your call or your letter of inquiry.

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HI-RANGER "SNORKEL"

MOBILE AERIAL TOWERS, INC.

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They're BOTH WINNING! INDIAN

FIRE PUMPS

Models No. 80 and No. 90

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(Sliding Pump Type)

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BOTH TYPES APPROVED BY FACTORY MUTUAL

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Halprin Supply Co., Los Angeles 15, Calif.
Fred E. Barnett Co., Portland, Ore.
Fred E. Barnett Co., Klamath Falls, Ore.
Mill & Mine Supply, Inc., Seattle, Wash.
L. M. Curtis & Sons, Salt Lake City, Utah

CANADIAN AGENTS

Fleck Bros. Limited, Vancouver, B.C.
C. E. Hickey & Sons, Ltd., Hamilton

FIRE SERVICE MEETINGS

November

California:

NOVEMBER 18: Marin County Association of Fire Departments, monthly meeting, Tamalpais Valley. Contact W. H. Lane, secretary, 74 Vendola Drive, San Rafael.

Delaware:

NOVEMBER 22: Sussex County Volunteer Firemen's Association, monthly meeting, Blades Volunteer Fire Co. Contact W. J. Quillen, secretary, Millville.

Missouri:

NOVEMBER 17: Franklin-Gasconade County Firefighters' Association, Inc., regular meeting, Sullivan. Contact E. J. Schmidt, president, 208 Mardet Street, Washington.

New Jersey:

NOVEMBER 17: Gloucester County Firemen's Association, monthly meeting, Pitman No. 1. Contact W. H. Mattson, secretary, 29 Home Avenue, Gibbstown.

New York:

NOVEMBER 29: Orange County Volunteer Firemen's Association, regular meeting, Highland Falls. Contact Kenneth Fowler, secretary, Harriman.

Ohio:

NOVEMBER 24: Stark County Firemen's Association, Inc., regular meeting, Bolivar. Contact Gene Kay, secretary, 2036-29th Street, S. E., Canton 5.

Oregon:

NOVEMBER 18: Polk-Yamhill Firemen's Association, regular meeting, Carlton. Contact Glenn Wick, secretary, 209 Hayter Street, Dallas.

Pennsylvania:

NOVEMBER 16: Beaver County Firemen's Relief Association, regular meeting, Beaver Fire Department. Contact W. E. Miller, secretary, 339 Pennsylvania Avenue, Rochester.

NOVEMBER 19: Keystone State Fire Chiefs' Association, Loyalsock Township, Williamsport — guest of West Branch Firemen's Association. Contact L. M. Atkinson, secretary, 125 Prospect Avenue, Malvern.

Rhode Island:

NOVEMBER 30: Pawtuxet Valley Firemen's League, regular meeting, West Warwick Fire Department. Contact E. F. Fiske, secretary, 34 Pleasant Street, West Warwick.

December

New Jersey:

DECEMBER 6: New Jersey State Firemen's Advisory Council, regular meeting, Fort Dix Fire Headquarters. Contact Luther S. Clark, Jr., secretary, Wood Road, Morristown.

DECEMBER 15: Gloucester County Firemen's Association, Christmas Party. Pitman Fire Patrol. Contact W. H. Mattson, secretary, 29 Home Avenue, Gibbstown.

New York:

DECEMBER 11: Central Adirondack Firemen's Association, regular meeting, Fort Johnson. Contact Floyd Simons, secretary, Wells.

DECEMBER 13: Sullivan County Volunteer Firemen's Association, Inc., Neversink Fire Department. Contact W. F. Harris, secretary, Pond Eddy.

(Continued on page 30)

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Powhatan

"SUPER-FORGE"

DROP FORGED BRASS COUPLINGS

★ LIGHTWEIGHT

★ NON-CORROSIVE

★ DURABLE

Plate No. 159-DFF

Three Lug "Sensible Lugs"

on Male and Female with Higbee Indicators

Available in 1½ and 2½ inch sizes

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In The Same Location Since 1892

The *little light* with BIG ACTION

Anyone can make a light that revolves or flashes and its price can be as low as its quality.

The ***FEDERAL Fireball*** and ***Flashball*** are made compact to fit the glove compartment, weigh less than a pound, cling tenaciously to dash or roof and plug into your lighter. Both have real precision reflectors that capture light rays at the source and project them in an intense beam.

The ***Fireball*** revolving light affords excellent protection enroute or at the scene, for the finest truck or for the Volunteer's personal automobile.

The ***Flashball,*** the economy model, also protects the Volunteer responding even though it projects a flashing beam just straight ahead.

Both the ***Fireball*** and the ***Flashball*** are precision instruments and are available in red, blue or almost any color you care to specify.

Write today for FEDERAL Bulletin #353.

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Christmas Greetings 1960

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ANSWER YOUR CHRISTMAS SEAL LETTER TODAY

"RESCUE BREATHING" ©1958

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- has been officially approved for purchase under the Federal Contributions Program.
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Fire Service Meetings

(*Continued from page 28*)

Ohio:

DECEMBER 1: Tri-County Volunteer Firemen's Association, regular meeting, West Wheeling. Contact C. W. Luyster, secretary, Piedmont.

DECEMBER 7: Greene County Firefighters' Association, regular meeting, Fairborn, sponsored by Greene County Sheriff's Department. Contact W. H. Shoemaker, secretary, 523 Glover Drive, Xenia.

DECEMBER 13: Summit County Firemen's Association, regular meeting, Tallmadge. Contact Harry Harris, secretary, 998 Kubler Street, Akron 12.

DECEMBER 14: Central Western Firemen's Association, bi-monthly meeting, Shiloh-Harrison Township Fire Department, Dayton 15. Contact M. L. Warner, secretary, Central Fire Station, Fairborn.

Pennsylvania:

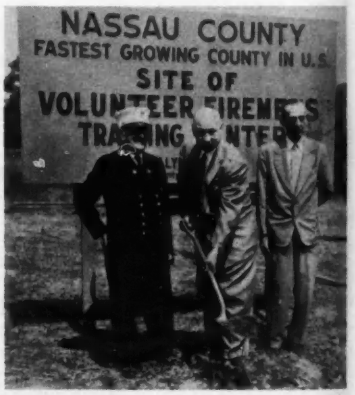
DECEMBER 14: Beaver County Firemen's Relief Association, regular meeting, South Side Fire Department. Contact W. E. Miller, secretary, 339 Pennsylvania Avenue, Rochester.

Rhode Island:

DECEMBER 13: Woonasquatuckett Valley Firemen's League, regular meeting, Marieville Fire Station, North Providence. Contact A. F. Rail, secretary, Chopmist Hill Road, Scituate.

Question: For many years fire department pumpers were required to deliver rated capacity at 150 pounds per square inch net pump pressure without exceeding 80 per cent of peak speed on a certified brake horsepower curve for the engine. What new requirement has replaced the 80 per cent of peak speed as a protection against excessive engine speeds?

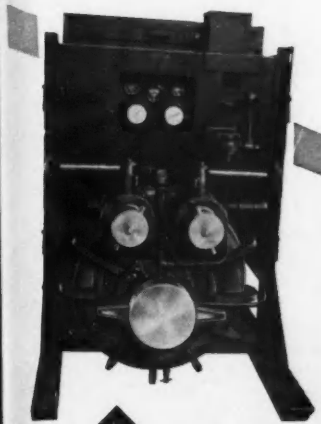
Answer: See Paragraphs 3041 and 3042 of NFPA Standard No. 19, 1960 edition.



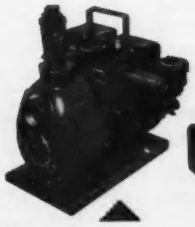
Training Center in Nassau County

A new half-million dollar training center for volunteer firemen in Nassau County is now under construction. Shown above, with the shovel, is County Executive A. Holly Patterson. At his left is August Kalb, one of the oldest active firemen in Nassau and chairman of the Firemen's Training Division of the Nassau County Vocational Education and Extension Board. At right is Public Works Commissioner Charles V. Smith.

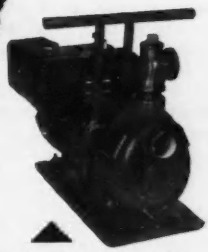
NOW You can pick the PUMP that serves YOUR Purpose Best from the HALE Complete Line of Pumping Units



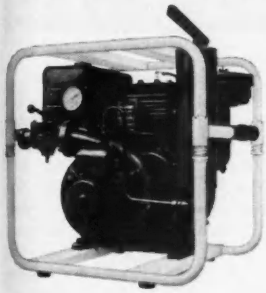
Type CFS—Skid mounted; pumps 500 U.S. GPM at 150 lbs. Also available mounted on trailer.



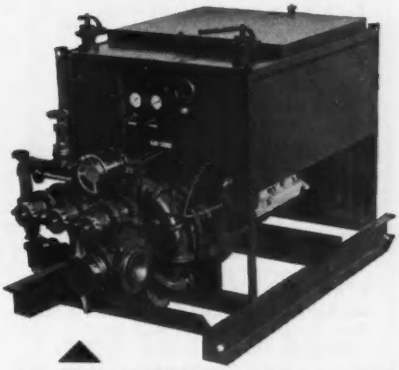
The 20-T "Torrent"—A compact, rugged and built-to-last unit. Pumps 7,000 GPH. Easily carried by one man.



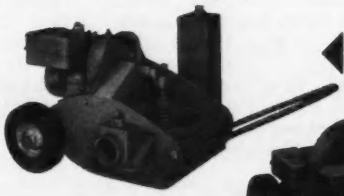
The 25-T "Torrent"—A self-priming, portable pumping unit for construction, industry and general utility. Pumps 10,000 GPH.



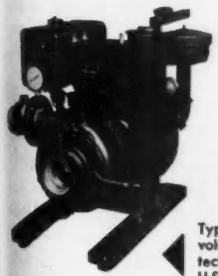
Type FZZ portable fire-pumping unit—Packs a pressure punch. Lightweight yet pumps 60 U.S. GPM at 90 lbs. Protective wrap-around frame with fold-away carrying handles.



Type CLF-V—A RUGGED, POWERFUL Unit. Pumps 750 GPM at 150 lbs. with ample reserve. Unit shown is deluxe model with foam proportioner and relief valve, etc. CLF-V is also available trailer-mounted.

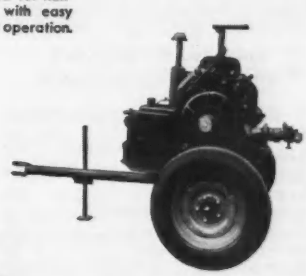


Type 20-DP Diaphragm Pump—A 3500 GPH pump designed for handling muck, silt or air, with easy maintenance and low-cost operation.



Type 15-DP 1½" Diaphragm Pump—A low cost, portable pump designed for positive handling of seepage and high-solid-content water. Pumps up to 3000 GPH.

Type FZ portable fire-pumping unit—Packs a volume punch. Available on skids or in protective wrap-around frame. Pumps up to 300 U.S. GPM at 18 lbs.; 115 GPM at 55 PSI.



Type WF—Designed for forestry service, industrial fire protection, and general utility pumping. Skid or trailer mounted. Pumps up to 150 U.S. GPM at 100 lbs.

No matter what your pumping needs are, there's a HALE pump to do the job *and do it right*. Hale fire pumps can be found on anything from the gigantic pumpers in the country's largest cities to fire-fighting jeeps in the back woods. Every type of Hale fire pump is custom designed for a specific use. Because of this, every Hale pump will give you RELIABILITY plus better service, efficiency, and long wear with less maintenance cost.

Write today for information on the Hale pump that will serve your purpose best! Write to Dept. F.

The 30-T "Torrent"—All-around use for moving high volumes of water fast. Pumps up to 20,000 GPH. Shown here with lock-type handles for easy carrying by 2 men.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PENNSYLVANIA

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Consider the products advertised in this issue.

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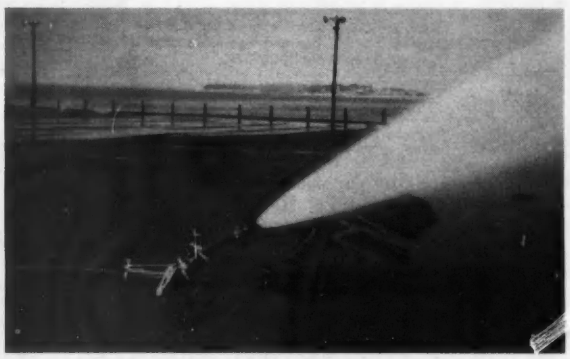
this month's *News and New Products*

Turbine Pumper

The San Francisco, California, Fire Department recently accepted delivery of the first 1,000 gpm pumper powered by a turbine engine. Built by American LaFrance Corporation, Elmira, New York, the pumper is driven by a 325 horsepower gas turbine engine produced by Boeing Industrial Products Division of Seattle, Washington. The new pumper is shown at right in front of San Francisco's City Hall. Shaking hands with Chief William F. Murray is Mayor George Christopher. (*Photo by San Francisco Fire Department.*)

There has been good response to the announcement of the Sparky "pattern-poster" on the back cover of last month's issue. Priced at only $1.35, the pattern can be used to create attractive replicas of Sparky, five feet high. The item can be used for making cardboard or wooden cutouts or simply as a paper poster. Complete instructions are sent for each pattern-poster. Order from the NFPA Public Relations Department. . . . Also much in demand are the three book sets specially prepared by NFPA for fire departments. Most popular is the "Fire Station Reference Set" (nine books, a $32 value for $24), followed closely by the "Fire Ground Library" (four books, a $14 value for $9.75) with the "Fire Fighter's Manuals" (five books, $18 value for $14.75) third in demand. See description of these useful sets on page 6 of the October issue of FIREMEN magazine. . . . November 30 is the closing date of the NFPA Fire Prevention Contest. Incidentally, municipalities frequently use the same entries for the National Inter-Chamber Fire Safety Contest sponsored by the Chamber of Commerce of the United States. Closing date of that contest is March 1, 1961.



Useful Hose Holder

Fire departments in small cities and towns or in rural areas can make good use of a substantial hose holder. This equipment permits setting a good-caliber stream in place to hit a fire or to protect exposures. Once set, the nozzle and line remain fixed.

A hose holder is shown above in use at the new drill grounds of the Boston, Massachusetts, Fire Department. Made by Akron Brass Mfg. Company, Inc., Wooster, Ohio, the 14-pound device is holding a 2½-inch line with a 500 gpm "Black Widow" nozzle.

STYLE 2351

STYLE 2350

STYLE 2352

New for Christmas!

Just out are these handy fire axe tie clasps for modern, narrow civilian dress ties. Reproduced in actual size above are the three designs now available in heavy gold plate or rhodium plate (silver) with axe blade in enameled red. Price is only $1.50 each. Write to Hook-Fast Specialties, Inc., P.O. Box 1425, Providence, Rhode Island.

Useful Kit for Burns

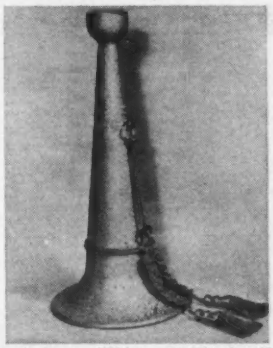
Here is a waterproof, dustproof first-aid kit weighing 4½ pounds and made of 20-gauge round-cornered steel dipped in zinc chromate. All units are cellophane wrapped with the exception of two 2-ounce aerosol burn spray canisters. The kit contains ammonia inhalants, adhesive plaster, compresses, tourniquet and scissors, gauze pads, bandages, eye dressing and antiseptic cream. The carrying case has a strong handle and two keyhole hangers of 18-gauge metal. Over-all dimensions are 9¼ x 7 x 2¼ inches. Write to A. E. Halperin Co., Inc., 75–87 Northampton Street, Boston 18, Massachusetts.

Rescue squad training in the mouth-to-mouth method of artificial respiration is made easy with MSco Breathe Life Trainer now marketed by Medical Supply Company, 1027 West State Street, Rockford, Illinois. . . . "SPARKY" Fire Dog Dolls are popular Christmas gifts for children. Order yours today from Roberts Company, P.O. Box 444D, Wayland, Massachusetts. . . . For beyond your water main areas, the Baughman fire tanker, up to 3,000 gallons, will add to your fire-fighting efficiency. Write Baughman Manufacturing Company, 317 Shipman Road, Jerseyville, Illinois.

"Pick the softest, cheapest thing in the vicinity, and hit it as slowly as possible." — Advice on forced landings in Student Pilots' Flight Manual.

FIRE TRUMPET

For Parades, Trophies, Awards



Cast aluminum — 19" long with 9" bell — 2" x 4" engraving plate and Ladder, H. & L., F. D. cast into trumpet — engraving, 8 cents per letter. Complete with yellow rayon cord, two 4" tassels.

Price: **$62.50**

Write to:

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Scripto

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WINDGUARD

VU-LIGHTER

Lets you know when the fuel is low!

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Comes with extra flint

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Wick never wears out

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Send **$3.95** Today to:

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Dept. FL-1

90-MI TRACEY PL., ENGLEWOOD, N. J.

The DeGROOT DRAG

Latest in Recovering Bodies

So simple it can be operated by two fingers! Covers 6 feet in dragging area.

Price $31.50

Plus shipping charges

Write for free literature.

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248 PUTNAM ST., PERU, ILL.

SALESMEN

Have available territory — whole or part time — Trucks, Hose, Brass goods — leads and personal help — immediate settlements — write for new brochure.

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CENTRAL FIRE TRUCK CORP. OF ST. LOUIS

P.O. BOX 158, MANCHESTER, MO.

FIREMEN!

INCREASE YOUR INCOME!

Convert your spare time into steady income selling most popular line of Belts and Buckles with Fireman's personal initials, first name or nickname with miniature replicas of actual fire equipment beautifully enameled, also lapels, tie clasps, key chains, money clips, and cuff links. Excellent repeat business. We furnish you with FREE complete sales kit. Really nice part-time money producing items.

NO INVESTMENT NECESSARY!

For full particulars, write to

HOOK-FAST SPECIALTIES, INC.

Factory — 16 Eudora St.

P.O. Box 1425F Providence, R. I.

STUDYING for PROMOTION?

Home study correspondence courses from National Preparatory Institute have assisted fire fighters of all ranks in their promotional studies for 39 years. Courses cover engine and ladder company procedures, salvage, overhauling, inspections, fire problems, hydraulics and other subjects with sketches and illustrations of fire problems, tools and equipment.

FOR THE MAN AT THE TOP . . . FOR THE MAN ON THE WAY!

General knowledge study of fire field subjects is keyed for rookies, plant protection forces and Armed Services fire forces. Your answers to problems are corrected and graded by qualified instructors.

For complete information, at no cost, write today to

NATIONAL PREPARATORY INSTITUTE

33B SWEETSER TERR., EAST LYNN, MASS.

Alco-Lite Ladder Involved in Dramatic Rescue!

Boston fire fighters struggle with man who was rescued from his 4th floor apartment during early morning fire, May 11. He was caught by the fire fighters when he tried to leap from window.

Exclusive Alco-Lite gusset-plate, expansion bushing construction makes possible the open siderail, T-channel design that eliminates extra weight-adding bulk without sacrificing an ounce of strength. This makes Alco-Lite Aluminum Ladders lighter in weight, and can save you precious minutes handling time at fires.

Alco-Lite Aluminum Ladders more than meet all requirements for strength and safety. They can't warp, rot, splinter, or burn. They are not affected by moisture, fumes, or gases. Maintenance is almost negligible.

Be sure you specify Alco-Lite Aluminum Ground Ladders on your apparatus. You'll find them easy to handle, safe, and no trouble to take care of.

Aluminum Ladder Company ALCO-LITE

FLORENCE S. CAROLINA

Packed with the fire-fighting power of two new Mack cab-forward pumpers and an expertly trained department, Rural Fire Protection District No. 56, Clackamas County, Oregon, is ready for any call. Recently delivered C-95 Model at right is rated at 1,000 gpm and is equipped with 500-gallon booster tank . . . two electric rewind hose reels . . . 100 amp alternator with 1,000 watt transformer . . . and no-spin differential for greater traction. Model C-85, rated at 750 gpm, has been in service for several months. Both units are powered by famed Thermodyne® 707C engines built by Mack and delivering more pumping power . . . more performance power . . . than anything in their class.

Another wide-awake fire company chooses Macks

Rural Fire Protection District 56, Clackamas County, Oregon, is justly proud of its two handsome new Mack canopy cab-forward pumpers. Since the Macks have been put in service, the district is confident that no comparable-size community in the West is more fully equipped—and more efficiently manned.

Here's why fire departments everywhere depend on Macks. *Custom engineering* . . . Mack delivers the unit that exactly meets *your* needs: cab-forward or conventional models—co-ordinated brake, rear axle ratio and chassis design—famous Mack-built components to surpass your most exacting requirements. *Dependable performance* . . . Mack fire apparatus is made to the highest standards in the industry. For sheer dependability, nothing can touch it. For sustained performance with only routine attention, nothing can match it. You can always depend on a Mack.

Talk it over with your Mack branch or distributor. He has full details on the complete line of Mack quality fire apparatus. Mack Fire Apparatus, Allentown, Pennsylvania. Mack Trucks of Canada, Ltd., Toronto, Ontario.

7936

MACK

FIRST NAME FOR

FIRE APPARATUS

COMPLETE LINE OF PUMPERS—500 to 1250 GPM...SQUAD AND HOSE WAGONS...AERIALS 65′ to 146′...COMBINATION LADDER TRUCKS

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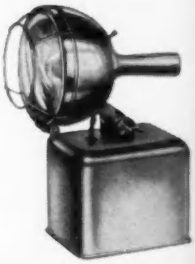
CARPENTER "PORTALITES" WITH RECHARGEABLE BATTERIES

DESIGNED FOR MODERATE TO FREQUENT USAGE . . .

CARPENTER-LIGHTS with heavy-duty rechargeable batteries are ideal units for frequent-use applications. Savings over dry battery replacements pay off the initial cost-differential after 50-75 hours of use. Corrosion-proof terminals plus efficient spring contacts allow insertion of spare batteries in only 10 seconds! . . . another Carpenter exclusive. Batteries are essentially nonspillable . . . may be placed in any practical position.

PRICES:
WS-6 . . . **$49.50**
Super-6 . . . **$45.00**
Running board holder . . . **$4.00**
Smoke-fog penetrating lens – **extra $1.00**

Type WS-6 *(Illus. above left)* The ideal light for chiefs and officers. Especially valuable for rescue work . . . where seconds count, it is on the job before mounted searchlights can be positioned. Operates as powerful searchlight or worklight. One battery charge gives 24 hours continuous service as worklight or 6 to 8 hours as searchlight . . . much longer if used intermittently. Only 12 lbs. including battery! Convenient finger-tip, self-balancing handle and beautiful duro-satin finish. Available with running board holder and smoke-fog penetrating lens as optional extras.
Type Super-6 *(Illus. right)* is the same fine basic unit except with rugged one-piece handle and housing.



Automotive Lights

CARPENTER-LIGHTS OFFER:

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the brilliancy you need to **see** danger, **warn** of danger, and **prevent** danger. Every component from battery and bulb to reflector and lens is designed to give **maximum** light.

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built to withstand the use and abuse of many years' service under the most trying conditions. No compromise on quality.

Beacon Lights

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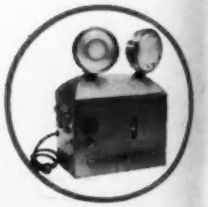

Automatic Emergency Lights

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